



SEQUENCE LISTING

<110> Clausen, Henrik
Bennett, Eric P.

<120> METHODS TO IDENTIFY AGENTS MODULATING FUNCTIONS OF POLYPEPTIDE
GALNAC-TRANSFERASES, PHARMACEUTICAL COMPOSITIONS COMPRISING SUCH AGENTS AND THE USE
OF SUCH AGENTS FOR PREPARING MEDICAMENTS

<130> 04305/100H154-US2

<150> US 60/425,204

<151> 2002-11-08

<150> PCT/DK03/00763

<151> 2003-11-07

<160> 127

<170> PatentIn version 3.1

<210> 1

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<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic peptide

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Ala Pro Pro Ala
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<210> 2

<211> 24

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<213> Artificial Sequence

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<223> synthetic peptide

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Ala Pro Gly Ser Thr Ala Pro Pro
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<210> 3

<211> 167

<212> PRT

<213> Homo sapiens

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Tyr Gly Asp Ile Ser Ser Arg Val Gly Leu Arg His Lys Leu Gln Cys
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Lys Pro Phe Ser Trp Tyr Leu Glu Asn Ile Tyr Pro Asp Ser Gln Ile
20 25 30

Pro Arg His Tyr Phe Ser Leu Gly Glu Ile Arg Asn Val Glu Thr Asn
35 40 45

Gln Cys Leu Asp Asn Met Ala Arg Lys Glu Asn Glu Lys Val Gly Ile
50 55 60

Phe Asn Cys His Gly Met Gly Gly Asn Gln Val Phe Ser Tyr Thr Ala
65 70 75 80

Asn Lys Glu Ile Arg Thr Asp Asp Leu Cys Leu Asp Val Ser Lys Leu
85 90 95

Asn Gly Pro Val Thr Met Leu Lys Cys His His Leu Lys Gly Asn Gln
100 105 110

Leu Trp Glu Tyr Asp Pro Val Lys Leu Thr Leu Gln His Val Asn Ser
115 120 125

Asn Gln Cys Leu Asp Lys Ala Thr Glu Glu Asp Ser Gln Val Pro Ser
130 135 140

Ile Arg Asp Cys Asn Gly Ser Arg Ser Gln Gln Trp Leu Leu Arg Asn
145 150 155 160

Val Thr Leu Pro Glu Ile Phe
165

<210> 4
<211> 164
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<213> Homo sapiens

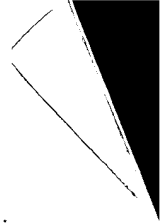
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Tyr Gly Asn Ile Gln Ser Arg Leu Glu Leu Arg Lys Lys Leu Ser Cys
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Lys Pro Phe Lys Trp Tyr Leu Glu Asn Val Tyr Pro Glu Leu Arg Val
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Pro Asp His Gln Asp Ile Ala Phe Gly Ala Leu Gln Gln Gly Thr Asn
35 40 45

Cys Leu Asp Thr Leu Gly His Phe Ala Asp Gly Val Val Gly Val Tyr
2



50

55

60

Glu Cys His Asn Ala Gly Gly Asn Gln Glu Trp Ala Leu Thr Lys Glu
65 70 75 80

Lys Ser Val Lys His Met Asp Leu Cys Leu Thr Val Val Asp Arg Ala
85 90 95

Pro Gly Ser Leu Ile Lys Leu Gln Gly Cys Arg Glu Asn Asp Ser Arg
100 105 110

Gln Lys Trp Glu Gln Ile Glu Gly Asn Ser Lys Leu Arg His Val Gly
115 120 125

Ser Asn Leu Cys Leu Asp Ser Arg Thr Ala Lys Ser Gly Gly Leu Ser
130 135 140

Val Glu Val Cys Gly Pro Ala Leu Ser Gln Gln Trp Lys Phe Thr Leu
145 150 155 160

Asn Leu Gln Gln

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<212> PRT
<213> Homo sapiens

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Phe Gly Asp Leu Ser Lys Arg Phe Glu Ile Lys His Arg Leu Arg Cys
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Lys Asn Phe Thr Trp Tyr Leu Asn Asn Ile Tyr Pro Glu Val Tyr Val
20 25 30

Pro Asp Leu Asn Pro Val Ile Ser Gly Tyr Ile Lys Ser Val Gly Gln
35 40 45

Pro Leu Cys Leu Asp Val Gly Glu Asn Asn Gln Gly Gly Lys Pro Leu
50 55 60

Ile Met Tyr Thr Cys His Gly Leu Gly Gly Asn Gln Tyr Phe Glu Tyr
65 70 75 80

Ser Ala Gln His Glu Ile Arg His Asn Ile Gln Lys Glu Leu Cys Leu
85 90 95

His Ala Ala Gln Gly Leu Val Gln Leu Lys Ala Cys Thr Tyr Lys Gly
100 105 110

His Lys Thr Val Val Thr Gly Glu Gln Ile Trp Glu Ile Gln Lys Asp
115 120 125

Gln Leu Leu Tyr Asn Pro Phe Leu Lys Met Cys Leu Ser Ala Asn Gly
130 135 140

Glu His Pro Ser Leu Val Ser Cys Asn Pro Ser Asp Pro Leu Gln Lys
145 150 155 160

Trp Ile Leu Ser Gln Asn Asp
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Ala Tyr Gly Asp Ile Ser Glu Arg Lys Leu Leu Arg Glu Arg Leu Arg
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Cys Lys Ser Phe Asp Trp Tyr Leu Lys Asn Val Phe Pro Asn Leu His
20 25 30

Val Pro Glu Asp Arg Pro Gly Trp His Gly Ala Ile Arg Ser Arg Gly
35 40 45

Ile Ser Ser Glu Cys Leu Asp Tyr Asn Ser Pro Asp Asn Asn Pro Thr
50 55 60

Gly Ala Asn Leu Ser Leu Phe Gly Cys His Gly Gln Gly Gly Asn Gln
65 70 75 80

Phe Phe Glu Tyr Thr Ser Asn Lys Glu Ile Arg Phe Asn Ser Val Thr
85 90 95

Glu Leu Cys Ala Glu Val Pro Glu Gln Lys Asn Tyr Val Gly Met Gln
100 105 110

Asn Cys Pro Lys Asp Gly Phe Pro Val Pro Ala Asn Ile Ile Trp His
115 120 125

Phe Lys Glu Asp Gly Thr Ile Phe His Pro His Ser Gly Leu Cys Leu
130 135 140

Ser Ala Tyr Arg Thr Pro Glu Gly Arg Pro Asp Val Gln Met Arg Thr
145 150 155 160

Cys Asp Ala Leu Asp Lys Asn Gln Ile Trp Ser Phe Glu Lys
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Asp Val Gly Asn Leu Thr Gln Gln Arg Glu Leu Arg Lys Lys Leu Lys
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Cys Lys Ser Phe Lys Trp Tyr Leu Glu Asn Val Phe Pro Asp Leu Arg
20 25 30

Ala Pro Ile Val Arg Ala Ser Gly Val Leu Ile Asn Val Ala Leu Gly
35 40 45

Lys Cys Ile Ser Ile Glu Asn Thr Thr Val Ile Leu Glu Asp Cys Asp
50 55 60

Gly Ser Lys Glu Leu Gln Gln Phe Asn Tyr Thr Trp Leu Arg Leu Ile
65 70 75 80

Lys Cys Gly Glu Trp Cys Ile Ala Pro Ile Pro Asp Lys Gly Ala Val
85 90 95

Arg Leu His Pro Cys Asp Asn Arg Asn Lys Gly Leu Lys Trp Leu His
100 105 110

Lys Ser Thr Ser Val Phe His Pro Glu Leu Val Asn His Ile Val Phe
115 120 125

Glu Asn Asn Gln Gln Leu Leu Cys Leu Glu Gly Asn Phe Ser Gln Lys
130 135 140

Ile Leu Lys Val Ala Ala Cys Asp Pro Val Lys Pro Tyr Gln Lys Trp
145 150 155 160

Lys Phe Glu Lys Tyr Tyr Glu Ala
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<213> Homo sapiens

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 Val Pro Asp Leu Thr Pro Thr Phe Tyr Gly Ala Ile Lys Asn Leu Gly
 35 40 45
 Thr Asn Gln Cys Leu Asp Val Gly Glu Asn Asn Arg Gly Gly Lys Pro
 50 55 60
 Leu Ile Met Tyr Ser Cys His Gly Leu Gly Gly Asn Gln Tyr Phe Glu
 65 70 75 80
 Tyr Thr Thr Gln Arg Asp Leu Arg His Asn Ile Ala Lys Gln Leu Cys
 85 90 95
 Leu His Val Ser Lys Gly Ala Leu Gly Leu Gly Ser Cys His Phe Thr
 100 105 110
 Gly Lys Asn Ser Gln Val Pro Lys Asp Glu Glu Trp Glu Leu Ala Gln
 115 120 125
 Asp Gln Leu Ile Arg Asn Ser Gly Ser Gly Thr Cys Leu Thr Ser Gln
 130 135 140
 Asp Lys Lys Pro Ala Met Ala Pro Cys Asn Pro Ser Asp Pro His Gln
 145 150 155 160
 Leu Trp Leu Phe Val
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 <213> Homo sapiens

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Tyr Gly Asp Ile Ser Glu Leu Lys Lys Phe Arg Glu Asp His Asn Cys
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 Gln Ser Phe Lys Trp Phe Met Glu Glu Ile Ala Tyr Asp Ile Thr Ser
 20 25 30
 His Tyr Pro Leu Pro Pro Lys Asn Val Asp Trp Gly Glu Ile Arg Gly
 35 40 45
 Phe Glu Thr Ala Tyr Cys Ile Asp Ser Met Gly Lys Thr Asn Gly Gly
 50 55 60

Phe Val Glu Leu Gly Pro Cys His Arg Met Gly Gly Asn Gln Leu Phe
65 70 75 80

Arg Ile Asn Glu Ala Asn Gln Leu Met Gln Tyr Asp Gln Cys Leu Thr
85 90 95

Lys Gly Ala Asp Gly Ser Lys Val Met Ile Thr His Cys Asn Leu Asn
100 105 110

Glu Phe Lys Glu Trp Gln Tyr Phe Lys Asn Leu His Arg Phe Thr His
115 120 125

Ile Pro Ser Gly Lys Cys Leu Asp Arg Ser Glu Val Leu His Gln Val
130 135 140

Phe Ile Ser Asn Cys Asp Ser Ser Lys Thr Thr Gln Lys Trp Glu Met
145 150 155 160

Asn Asn Ile His Ser Val
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<213> Homo sapiens

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Phe Gly Asp Val Ser Ser Arg Met Ala Leu Arg Glu Lys Leu Lys Cys
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Lys Thr Phe Asp Trp Tyr Leu Lys Asn Val Tyr Pro Leu Leu Lys Pro
20 25 30

Leu His Thr Ile Val Gly Tyr Gly Arg Met Lys Asn Leu Leu Asp Glu
35 40 45

Asn Val Cys Leu Asp Gln Gly Pro Val Pro Gly Asn Thr Pro Ile Met
50 55 60

Tyr Tyr Cys His Glu Phe Ser Ser Gln Asn Val Tyr Tyr His Leu Thr
65 70 75 80

Gly Glu Leu Tyr Val Gly Gln Leu Ile Ala Glu Ala Ser Ala Ser Asp
85 90 95

Arg Cys Leu Thr Asp Pro Gly Lys Ala Glu Lys Pro Thr Leu Glu Pro
100 105 110

Cys Ser Lys Ala Ala Lys Asn Arg Leu His Ile Tyr Trp Asp Phe Lys
115 120 125

Pro Gly Gly Ala Val Ile Asn Arg Asp Thr Lys Arg Cys Leu Glu Met
130 135 140

Lys Lys Asp Leu Leu Gly Ser His Val Leu Val Leu Gln Thr Cys Ser
145 150 155 160

Thr Gln Val Trp Glu Ile Gln His Thr Val Arg Asp Trp Gly Gln Thr
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Asn Ser Gln

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Phe Gly Asp Val Ser Glu Arg Leu Ala Leu Arg Gln Arg Leu Lys Cys
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Arg Ser Phe Lys Trp Tyr Leu Glu Asn Val Tyr Pro Glu Met Arg Val
20 25 30

Tyr Asn Asn Thr Leu Thr Tyr Gly Glu Val Arg Asn Ser Lys Ala Ser
35 40 45

Ala Tyr Cys Leu Asp Gln Gly Ala Glu Asp Gly Asp Arg Ala Ile Leu
50 55 60

Tyr Pro Cys His Gly Met Ser Ser Gln Leu Val Arg Tyr Ser Ala Asp
65 70 75 80

Gly Leu Leu Gln Leu Gly Pro Leu Gly Ser Thr Ala Phe Leu Pro Asp
85 90 95

Ser Lys Cys Leu Val Asp Asp Gly Thr Gly Arg Met Pro Thr Leu Lys
100 105 110

Arg Cys Glu Asp Val Ala Arg Pro Thr Gln Arg Leu Trp Asp Phe Thr
115 120 125

Gln Ser Gly Pro Ile Val Ser Arg Ala Thr Gly Arg Cys Leu Glu Val
130 135 140

Glu Met Ser Lys Asp Ala Asn Phe Gly Leu Arg Leu Val Val Gln Arg
145 150 155 160

Cys Ser Gly Gln Lys Trp Met Ile Arg Asn Trp Ile Lys His Ala Arg
165 170 175

His

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<213> Homo sapiens

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Ala Gly Asp Val Ala Val Gln Lys Lys Leu Arg Ser Ser Leu Asn Cys
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Lys Ser Phe Lys Trp Phe Met Thr Lys Ile Ala Trp Asp Leu Pro Lys
20 25 30

Phe Tyr Pro Pro Val Glu Pro Pro Ala Ala Ala Trp Gly Glu Ile Arg
35 40 45

Asn Val Gly Thr Gly Leu Cys Ala Asp Thr Lys His Gly Ala Leu Gly
50 55 60

Ser Pro Leu Arg Leu Glu Gly Cys Val Arg Gly Arg Gly Glu Ala Ala
65 70 75 80

Trp Asn Asn Met Gln Val Phe Thr Phe Thr Trp Arg Glu Asp Ile Arg
85 90 95

Pro Gly Asp Pro Gln His Thr Lys Lys Phe Cys Phe Asp Ala Ile Ser
100 105 110

His Thr Ser Pro Val Thr Leu Tyr Asp Cys His Ser Met Lys Gly Asn
115 120 125

Gln Leu Trp Lys Tyr Arg Lys Asp Lys Thr Leu Tyr His Pro Val Ser
130 135 140

Gly Ser Cys Met Asp Cys Ser Glu Ser Asp His Arg Ile Phe Met Asn
145 150 155 160

Thr Cys Asn Pro Ser Ser Leu Thr Gln Gln Trp Leu Phe Glu His Thr
165 170 175

Asn Ser Thr Val Leu Glu Lys Phe Asn Arg Asn
9

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185

<210> 13
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<400> 13

Asn Ile Ser Glu Arg Val Glu Leu Arg Lys Lys Leu Gly Cys Lys Ser
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Phe Lys Trp Tyr Leu Asp Asn Val Tyr Pro Glu Met Gln Ile Ser Gly
 20 25 30

Ser His Ala Lys Pro Gln Gln Pro Ile Phe Val Asn Arg Gly Pro Lys
 35 40 45

Arg Pro Lys Val Leu Gln Arg Gly Arg Leu Tyr His Leu Gln Thr Asn
 50 55 60

Lys Cys Leu Val Ala Gln Gly Arg Pro Ser Gln Lys Gly Gly Leu Val
 65 70 75 80

Val Leu Lys Ala Cys Asp Tyr Ser Asp Pro Asn Gln Ile Trp Ile Tyr
 85 90 95

Asn Glu Glu His Glu Leu Val Leu Asn Ser Leu Leu Cys Leu Asp Met
 100 105 110

Ser Glu Thr Arg Ser Ser Asp Pro Pro Arg Leu Met Lys Cys His Gly
 115 120 125

Ser Gly Gly Ser Gln Gln Trp Thr Phe Gly Lys Asn Asn Arg Leu Tyr
 130 135 140

Gln Val Ser Val Gly Gln Cys Leu Arg Ala Val Asp Pro Leu Gly Gln
 145 150 155 160

Lys Gly Ser Val Ala Met Ala Ile Cys Asp Gly Ser Ser Ser Gln Gln
 165 170 175

Trp His Leu Glu Gly
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Asp Val Thr Glu Arg Lys Gln Leu Arg Asp Lys Leu Gln Cys Lys Asp
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 Phe Lys Trp Phe Leu Glu Thr Val Tyr Pro Glu Leu His Val Pro Glu
 20 25 30
 Asp Arg Pro Gly Phe Phe Gly Met Leu Gln Asn Lys Gly Leu Thr Asp
 35 40 45
 Tyr Cys Phe Asp Tyr Asn Pro Pro Asp Glu Asn Gln Ile Val Gly His
 50 55 60
 Gln Val Ile Leu Tyr Leu Cys His Gly Met Gly Gln Asn Gln Phe Phe
 65 70 75 80
 Glu Tyr Thr Ser Gln Lys Glu Ile Arg Tyr Asn Thr His Gln Pro Glu
 85 90 95
 Gly Cys Ile Ala Val Glu Ala Gly Met Asp Thr Leu Ile Met His Leu
 100 105 110
 Cys Glu Glu Thr Ala Pro Glu Asn Gln Lys Phe Ile Leu Gln Glu Asp
 115 120 125
 Gly Ser Leu Phe His Glu Gln Ser Lys Lys Cys Val Gln Ala Ala Arg
 130 135 140
 Lys Glu Ser Ser Asp Ser Phe Val Pro Leu Leu Arg Asp Cys Thr Asn
 145 150 155 160
 Ser Asp His Gln Lys Trp Phe Phe Lys Glu Arg Met Leu
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<400> 15

Glu Lys Pro Asp Cys Met Glu Arg Leu Gln Leu Gln Arg Arg Leu Gly
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 Cys Arg Thr Phe His Trp Phe Leu Ala Asn Val Tyr Pro Glu Leu Tyr
 20 25 30
 Pro Ser Glu Pro Arg Pro Ser Phe Ser Gly Lys Leu His Asn Thr Gly
 35 40 45

Leu Gly Leu Cys Ala Asp Cys Gln Ala Glu Gly Asp Ile Leu Gly Cys
50 55 60

Pro Met Val Leu Ala Pro Cys Ser Asp Ser Arg Gln Gln Gln Tyr Leu
65 70 75 80

Gln His Thr Ser Arg Lys Glu Ile His Phe Gly Ser Pro Gln His Leu
85 90 95

Cys Phe Ala Val Arg Gln Glu Gln Val Ile Leu Gln Asn Cys Thr Glu
100 105 110

Glu Gly Leu Ala Ile His Gln Gln His Trp Asp Phe Gln Glu Asn Gly
115 120 125

Met Ile Val His Ile Leu Ser Gly Lys Cys Met Glu Ala Val Val Gln
130 135 140

Glu Asn Asn Lys Asp Leu Tyr Leu Arg Pro Cys Asp Gly Lys Ala Arg
145 150 155 160

Gln Gln Trp Arg Phe Asp Gln Ile Asn Ala Val Asp Glu Arg
165 170

<210> 16
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<213> Homo sapiens

<400> 16

Tyr Gly Asp Val Ser Val Arg Lys Thr Leu Arg Glu Asn Leu Lys Cys
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Lys Pro Phe Ser Trp Tyr Leu Glu Asn Ile Tyr Pro Asp Ser Gln Ile
20 25 30

Pro Arg Arg Tyr Tyr Ser Leu Gly Glu Ile Arg Asn Val Glu Thr Asn
35 40 45

Gln Cys Leu Asp Asn Met Gly Arg Lys Glu Asn Glu Lys Val Gly Ile
50 55 60

Phe Asn Cys His Gly Met Gly Gly Asn Gln Val Phe Ser Tyr Thr Ala
65 70 75 80

Asp Lys Glu Ile Arg Thr Asp Asp Leu Cys Leu Asp Val Ser Arg Leu
85 90 95

Asn Gly Pro Val Ile Met Leu Lys Cys His His Met Arg Gly Asn Gln
12

100

105

110

Leu Trp Glu Tyr Asp Ala Glu Arg Leu Thr Leu Arg His Val Asn Ser
 115 120 125

Asn Gln Cys Leu Asp Glu Pro Ser Glu Glu Asp Lys Met Val Pro Thr
 130 135 140

Met Gln Asp Cys Ser Gly Ser Arg Ser Gln Gln Trp Leu Leu Arg Asn
 145 150 155 160

Met Thr Leu Gly Thr
 165

<210> 17
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Phe Gly Asn Val Glu Ser Arg Leu Asp Leu Arg Lys Asn Leu Arg Cys
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Gln Ser Phe Lys Trp Tyr Leu Glu Asn Ile Tyr Pro Glu Leu Ser Ile
 20 25 30

Pro Lys Glu Ser Ser Ile Gln Lys Gly Asn Ile Arg Gln Arg Gln Lys
 35 40 45

Cys Leu Glu Ser Gln Arg Gln Asn Asn Gln Glu Thr Pro Asn Leu Lys
 50 55 60

Leu Ser Pro Cys Ala Lys Val Lys Gly Glu Asp Ala Lys Ser Gln Val
 65 70 75 80

Trp Ala Phe Thr Tyr Thr Gln Lys Ile Leu Gln Glu Glu Leu Cys Leu
 85 90 95

Ser Val Ile Thr Leu Phe Pro Gly Ala Pro Val Val Leu Val Leu Cys
 100 105 110

Lys Asn Gly Asp Asp Arg Gln Gln Trp Thr Lys Thr Gly Ser His Ile
 115 120 125

Glu His Ile Ala Ser His Leu Cys Leu Asp Thr Asp Met Phe Gly Asp
 130 135 140

Gly Thr Glu Asn Gly Lys Glu Ile Gly Val Asn Pro Cys Glu Ser Ser
 145 150 155 160
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Leu Met Ser Gln His Trp Asp Met Val Ser Ser
165 170

<210> 18
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<213> Homo sapiens

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Ser Val Ala Thr Arg Ile Glu Gln Arg Lys Lys Met Asn Cys Lys Ser
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20 25 30

Lys Glu Ala Leu Pro Gly Ile Ile Lys Gln Gly Val Asn Cys Leu Glu
35 40 45

Ser Gln Gly Gln Asn Thr Ala Gly Asp Phe Leu Leu Gly Met Gly Ile
50 55 60

Cys Arg Gly Ser Ala Lys Asn Pro Gln Pro Ala Gln Ala Trp Leu Phe
65 70 75 80

Ser Asp His Leu Ile Gln Gln Gln Gly Lys Cys Leu Ala Ala Thr Ser
85 90 95

Thr Leu Met Ser Ser Pro Gly Ser Pro Val Ile Leu Gln Met Cys Asn
100 105 110

Pro Arg Glu Gly Lys Gln Lys Trp Arg Arg Lys Gly Ser Phe Ile Gln
115 120 125

His Ser Val Ser Gly Leu Cys Leu Glu Thr Lys Pro Ala Gln Leu Val
130 135 140

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145 150 155 160

Pro His Thr

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<213> Homo sapiens

<400> 19

Trp Tyr Leu Glu Asn Val Tyr Pro
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gcggatcctc agaatatttc tggaaggg 28

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<400> 23
gcggaattcc tactgctgca gggtgagc 28

<210> 24
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<212> DNA
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gcgggatcca acgatggaaa ggaacatg 28

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 agcggatcca ggaacactta atcattttgg c 31

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 gcgggatcct ttcatgcct ccgcaggagc c 31

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 <400> 27
 gcgggatccg acgaaagtgc tggttgctc 30

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<220> <223> PCR primer	
<400> 37 gcgggatcct cagtgccgctc ggtgtttgat cc	32
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 <213> Artificial Sequence

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 <212> DNA
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 <220>
 <223> PCR primer

 <400> 45
 gcgggatcct catcgttcat ccacagcatt g 31

<210> 46
 <211> 32
 <212> DNA
 <213> Artificial Sequence

<220>
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<400> 46
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 <212> DNA
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 <223> PCR primer

<400> 48
 gcgggatccc aagaggaagt tggaggtgcc g 31

<210> 49
 <211> 31
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 <213> Artificial Sequence

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<220>
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<400> 50
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<210> 51
 <211> 30
 <212> DNA
 <213> Artificial Sequence

<220>
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<400> 51
gcgtcatgtg tgtggcaaca gctgccactg 30

<210> 52
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<212> DNA
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<220>
<223> synthetic nucleotide

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tggtgccgcg cggcagccat atggctagca tgactggtgg acagcaaattg ggtcgcggaa 120
ttccgatatc aagcttatcg ataccgtcga cctcgag 157

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<220>
<223> synthetic nucleotide

<400> 53
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gcagccatat ggctagcatg actggtggac agcaaattga tccactagtt ctagagcggc 120
cgc 123

<210> 54
<211> 1746
<212> DNA
<213> Homo sapiens

<400> 54
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ctgttggtgc tcctggcgct actggcgctg gccgggctgg gctcgggtgct gcgggcgag 120
cgtggggccg gggccggggc tgccgagccg ggacccccgc gcacccccgc ccccgggcg 180
cgcgagccgg tcatgccgcg gccgccggtg ccggcgaacg cgctgggcg gcggggcgag 240
gcggtgcggc tgcatgtca gggcgaggag ctgcggctgc aggaggagag cgtgcggctg 300
caccagatta acatctacct cagcgaccgc atctcactgc accgccgcct gcccagcgc 360
tggaaccgc tgtgcaaaga gaagaaatat gattatgata atttgcccag gacatctgtt 420
atcatagcat ttataatga agcctggtca actctccttc ggacagttta cagtgtcctt 480
gagacatccc cggatatcct gctagaagaa gtgatacctg tagatgacta cagtgataga 540
gagcacctga aggagcgctt ggccaatgag ctttcgggac tgcccaaggt gcgcctgatc 600
cgcgccaaca agagagaggg cctggtgcga gcccggtgc tggggcgctc tgcggcgagg 660

ggcgatgttc tgaccttcct ggactgtcac tgtgaatgcc acgaagggtg gctggagccg 720
 ctgctgcaga ggatccatga agaggagtcg gcagtgggtgt gcccgggtgat tgatgtgata 780
 gactggaaca ccttcgaata cctggggaac tccggggagc cccagatcgg cggtttcgac 840
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 cccgtcgatg tcatcaggtc tccaacaatg gctggtgggc tgtttgctgt gagtaagaaa 960
 tattttgaat atctgggggtc ttatgataca ggaatggaag tttggggagg agaaaacctc 1020
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 cgtgcccgtt tggaaccttt tggggatgtg acagagagga agcagctccg ggacaagctc 1260
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 gacaggcctg gcttcttcgg gatgctccag aacaaaggac taacagacta ctgctttgac 1380
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 caccagcctg agggctgcat tgctgtggaa gcaggaatgg atacccttat catgcatctc 1560
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 cacgaacagt ccaagaaatg tgtccaggct gcgaggaagg agtcgagtga cagtttcgtt 1680
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 ttatga 1746

<210> 55
 <211> 581
 <212> PRT
 <213> Homo sapiens

<400> 55

Met Trp Gly Arg Thr Ala Arg Arg Arg Cys Pro Arg Glu Leu Arg Arg
 1 5 10 15

Gly Arg Glu Ala Leu Leu Val Leu Leu Ala Leu Leu Ala Leu Ala Gly
 20 25 30

Leu Gly Ser Val Leu Arg Ala Gln Arg Gly Ala Gly Ala Gly Ala Ala
 35 40 45

Glu Pro Gly Pro Pro Arg Thr Pro Arg Pro Gly Arg Arg Glu Pro Val
 50 55 60

Met Pro Arg Pro Pro Val Pro Ala Asn Ala Leu Gly Ala Arg Gly Glu
 65 70 75 80
 22

Ala Val Arg Leu Gln Leu Gln Gly Glu Glu Leu Arg Leu Gln Glu Glu
 85 90 95
 Ser Val Arg Leu His Gln Ile Asn Ile Tyr Leu Ser Asp Arg Ile Ser
 100 105 110
 Leu His Arg Arg Leu Pro Glu Arg Trp Asn Pro Leu Cys Lys Glu Lys
 115 120 125
 Lys Tyr Asp Tyr Asp Asn Leu Pro Arg Thr Ser Val Ile Ile Ala Phe
 130 135 140
 Tyr Asn Glu Ala Trp Ser Thr Leu Leu Arg Thr Val Tyr Ser Val Leu
 145 150 155 160
 Glu Thr Ser Pro Asp Ile Leu Leu Glu Glu Val Ile Leu Val Asp Asp
 165 170 175
 Tyr Ser Asp Arg Glu His Leu Lys Glu Arg Leu Ala Asn Glu Leu Ser
 180 185 190
 Gly Leu Pro Lys Val Arg Leu Ile Arg Ala Asn Lys Lys Lys Gly Leu
 195 200 205
 Val Arg Ala Arg Leu Leu Gly Ala Ser Ala Ala Arg Gly Asp Val Leu
 210 215 220
 Thr Phe Leu Asp Cys His Cys Glu Cys His Glu Gly Trp Leu Glu Pro
 225 230 235 240
 Leu Leu Gln Arg Ile His Glu Glu Glu Ser Ala Val Val Cys Pro Val
 245 250 255
 Ile Asp Val Ile Asp Trp Asn Thr Phe Glu Tyr Leu Gly Asn Ser Gly
 260 265 270
 Glu Pro Gln Ile Gly Gly Phe Asp Trp Arg Leu Val Phe Thr Trp His
 275 280 285
 Thr Val Pro Glu Arg Glu Arg Ile Arg Met Gln Ser Pro Val Asp Val
 290 295 300
 Ile Arg Ser Pro Thr Met Ala Gly Gly Leu Phe Ala Val Ser Lys Lys
 305 310 315 320
 Tyr Phe Glu Tyr Leu Gly Ser Tyr Asp Thr Gly Met Glu Val Trp Gly
 325 330 335

Gly Glu Asn Leu Glu Phe Ser Phe Arg Ile Trp Gln Cys Gly Gly Val
 340 345 350
 Leu Glu Thr His Pro Cys Ser His Val Gly His Phe Ser Pro Ser Lys
 355 360 365
 Leu Pro Thr Pro Arg Asn Lys Ala Leu Ala Asn Ser Val Arg Ala Ala
 370 375 380
 Glu Val Trp Met Asp Glu Phe Lys Glu Leu Tyr Tyr His Arg Asn Pro
 385 390 395 400
 Arg Ala Arg Leu Glu Pro Phe Gly Asp Val Thr Glu Arg Lys Gln Leu
 405 410 415
 Arg Asp Lys Leu Gln Cys Lys Asp Phe Lys Trp Phe Leu Glu Thr Val
 420 425 430
 Tyr Pro Glu Leu His Val Pro Glu Asp Arg Pro Gly Phe Phe Gly Met
 435 440 445
 Leu Gln Asn Lys Gly Leu Thr Asp Tyr Cys Phe Asp Tyr Asn Pro Pro
 450 455 460
 Asp Glu Asn Gln Ile Val Gly His Gln Val Ile Leu Tyr Leu Cys His
 465 470 475 480
 Gly Met Gly Gln Asn Gln Phe Phe Glu Tyr Thr Ser Gln Lys Glu Ile
 485 490 495
 Arg Tyr Asn Thr His Gln Pro Glu Gly Cys Ile Ala Val Glu Ala Gly
 500 505 510
 Met Asp Thr Leu Ile Met His Leu Cys Glu Glu Thr Ala Pro Glu Asn
 515 520 525
 Gln Lys Phe Ile Leu Gln Glu Asp Gly Ser Leu Phe His Glu Gln Ser
 530 535 540
 Lys Lys Cys Val Gln Ala Ala Arg Lys Glu Ser Ser Asp Ser Phe Val
 545 550 555 560
 Pro Leu Leu Arg Asp Cys Thr Asn Ser Asp His Gln Lys Trp Phe Phe
 565 570 575
 Lys Glu Arg Met Leu
 580

<210> 56
 <211> 1920
 <212> DNA
 <213> Homo sapiens

<400> 56
 atgctcctaa ggaagcgata caggcacaga ccatgcagac tccagttcct cctgctgctc 60
 ctgatgctgg gatgcgtcct gatgatggtg gcgatgttgc accctcccca ccacaccctg 120
 caccagactg tcacagccca agccagcaag cacagccctg aagccaggta ccgcctggac 180
 tttggggaat cccaggattg ggtactggaa gctgaggatg aggggtgaaga gtacagccct 240
 ctggagggcc tgccaccctt tatctcactg cgggaggatc agctgctggt ggccgtggcc 300
 ttaccccagg ccagaaggaa ccagagccag ggcaggagag gtgggagcta ccgcctcatc 360
 aagcagccaa ggaggcagga taaggaagcc ccaaagaggg actggggggc tgatgaggac 420
 ggggaggtgt ctgaagaaga ggagttgacc ccgttcagcc tggaccacg tggcctccag 480
 gaggcactca gtgcccgcct cccctccag agggctctgc ccgaggtgcg gcaccactg 540
 tgtctgcagc agcaccctca ggacagcctg cccacagcca gcgtcatcct ctgtttccat 600
 gatgaggcct ggtccactct cctgaggact gtacacagca tcctcgacac agtgcccagg 660
 gccttcctga aggagatcat cctcgtggac gacctcagcc agcaaggaca actcaagtct 720
 gctctcagcg aatatgtggc caggctggag ggggtgaagt tactcaggag caacaagagg 780
 ctgggtgccca tcagggcccg gatgctgggg gccaccagag ccaccgggga tgtgctcgtc 840
 ttcattgatg cccactgcga gtgccaccca ggctggctgg agccccctct cagcagaata 900
 gctggtgaca ggagccgagt ggtatctccg gtgatagatg tgattgactg gaagactttc 960
 cagtattacc cctcaaagga cctgcagcgt ggggtgttgg actggaagct ggattttcac 1020
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 agccctgtgg tgcccggaga ggtggtggcc atggacagac attacttcca aaacactgga 1140
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 aatcaggatt cccattcccc cctcgaccag gaggccaccc tgaggaacag ggttcgcatt 1320
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 tccttgagca aggctgagaa gccagactgc atggaacgct tgcagctgca aaggagactg 1440
 ggttgtcgga cattccactg gtttctggct aatgtctacc ctgagctgta cccatctgaa 1500
 cccaggccca gtttctctgg aaagctccac aacactggac ttgggctctg tgcagactgc 1560
 caggcagaag gggacatcct gggctgtccc atggtgttgg ctccttgagc tgacagccgg 1620
 cagcaacagt acctgcagca caccagcagg aaggagattc actttggcag cccacagcac 1680

ctgtgctttg ctgtcaggca ggagcaggtg attcttcaga actgcacgga ggaaggcctg 1740
gccatccacc agcagcactg ggacttccag gagaatggga tgattgtcca cattctttct 1800
gggaaatgca tggaagctgt ggtgcaagaa aacaataaag atttgtacct gcgtccgtgt 1860
gatggaaaag cccgccagca gtggcgtttt gaccagatca atgctgtgga tgaacgatga 1920

<210> 57
<211> 639
<212> PRT
<213> Homo sapiens

<400> 57

Met Leu Leu Arg Lys Arg Tyr Arg His Arg Pro Cys Arg Leu Gln Phe
1 5 10 15

Leu Leu Leu Leu Leu Met Leu Gly Cys Val Leu Met Met Val Ala Met
20 25 30

Leu His Pro Pro His His Thr Leu His Gln Thr Val Thr Ala Gln Ala
35 40 45

Ser Lys His Ser Pro Glu Ala Arg Tyr Arg Leu Asp Phe Gly Glu Ser
50 55 60

Gln Asp Trp Val Leu Glu Ala Glu Asp Glu Gly Glu Glu Tyr Ser Pro
65 70 75 80

Leu Glu Gly Leu Pro Pro Phe Ile Ser Leu Arg Glu Asp Gln Leu Leu
85 90 95

Val Ala Val Ala Leu Pro Gln Ala Arg Arg Asn Gln Ser Gln Gly Arg
100 105 110

Arg Gly Gly Ser Tyr Arg Leu Ile Lys Gln Pro Arg Arg Gln Asp Lys
115 120 125

Glu Ala Pro Lys Arg Asp Trp Gly Ala Asp Glu Asp Gly Glu Val Ser
130 135 140

Glu Glu Glu Glu Leu Thr Pro Phe Ser Leu Asp Pro Arg Gly Leu Gln
145 150 155 160

Glu Ala Leu Ser Ala Arg Ile Pro Leu Gln Arg Ala Leu Pro Glu Val
165 170 175

Arg His Pro Leu Cys Leu Gln Gln His Pro Gln Asp Ser Leu Pro Thr
180 185 190

Ala Ser Val Ile Leu Cys Phe His Asp Glu Ala Trp Ser Thr Leu Leu
 195 200

Arg Thr Val His Ser Ile Leu Asp Thr Val Pro Arg Ala Phe Leu Lys
 210 215 220

Glu Ile Ile Leu Val Asp Asp Leu Ser Gln Gln Gly Gln Leu Lys Ser
 225 230 235 240

Ala Leu Ser Glu Tyr Val Ala Arg Leu Glu Gly Val Lys Leu Leu Arg
 245 250 255

Ser Asn Lys Arg Leu Gly Ala Ile Arg Ala Arg Met Leu Gly Ala Thr
 260 265 270

Arg Ala Thr Gly Asp Val Leu Val Phe Met Asp Ala His Cys Glu Cys
 275 280 285

His Pro Gly Trp Leu Glu Pro Leu Leu Ser Arg Ile Ala Gly Asp Arg
 290 295 300

Ser Arg Val Val Ser Pro Val Ile Asp Val Ile Asp Trp Lys Thr Phe
 305 310 315 320

Gln Tyr Tyr Pro Ser Lys Asp Leu Gln Arg Gly Val Leu Asp Trp Lys
 325 330 335

Leu Asp Phe His Trp Glu Pro Leu Pro Glu His Val Arg Lys Ala Leu
 340 345 350

Gln Ser Pro Ile Ser Pro Ile Arg Ser Pro Val Val Pro Gly Glu Val
 355 360 365

Val Ala Met Asp Arg His Tyr Phe Gln Asn Thr Gly Ala Tyr Asp Ser
 370 375 380

Leu Met Ser Leu Arg Gly Gly Glu Asn Leu Glu Leu Ser Phe Lys Ala
 385 390 395 400

Trp Leu Cys Gly Gly Ser Val Glu Ile Leu Pro Cys Ser Arg Val Gly
 405 410 415

His Ile Tyr Gln Asn Gln Asp Ser His Ser Pro Leu Asp Gln Glu Ala
 420 425 430

Thr Leu Arg Asn Arg Val Arg Ile Ala Glu Thr Trp Leu Gly Ser Phe
 435 440 445

Lys Glu Thr Phe Tyr Lys His Ser Pro Glu Ala Phe Ser Leu Ser Lys
450 455 460

Ala Glu Lys Pro Asp Cys Met Glu Arg Leu Gln Leu Gln Arg Arg Leu
465 470 475 480

Gly Cys Arg Thr Phe His Trp Phe Leu Ala Asn Val Tyr Pro Glu Leu
485 490 495

Tyr Pro Ser Glu Pro Arg Pro Ser Phe Ser Gly Lys Leu His Asn Thr
500 505 510

Gly Leu Gly Leu Cys Ala Asp Cys Gln Ala Glu Gly Asp Ile Leu Gly
515 520 525

Cys Pro Met Val Leu Ala Pro Cys Ser Asp Ser Arg Gln Gln Gln Tyr
530 535 540

Leu Gln His Thr Ser Arg Lys Glu Ile His Phe Gly Ser Pro Gln His
545 550 555 560

Leu Cys Phe Ala Val Arg Gln Glu Gln Val Ile Leu Gln Asn Cys Thr
565 570 575

Glu Glu Gly Leu Ala Ile His Gln Gln His Trp Asp Phe Gln Glu Asn
580 585 590

Gly Met Ile Val His Ile Leu Ser Gly Lys Cys Met Glu Ala Val Val
595 600 605

Gln Glu Asn Asn Lys Asp Leu Tyr Leu Arg Pro Cys Asp Gly Lys Ala
610 615 620

Arg Gln Gln Trp Arg Phe Asp Gln Ile Asn Ala Val Asp Glu Arg
625 630 635

<210> 58
<211> 1671
<212> DNA
<213> Homo sapiens

<400> 58
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tctctgctgc ctgcattgag ggctgttatt tcaagaaacc aagaagggcc aggagaaatg 180
ggaaaagctg tgttgattcc taaagatgac caggagaaaa tgaaagagct gtttaaaatc 240
aatcagttta accttatggc cagtgatttg attgccctta atagaagtct gccagatgta 300

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 attgtgtttc ataatgaagc ttggagcact ctccttagaa ctgtttacag tgtgataaat 420
 cgttccccac actatctact ctgagaggtc atcttggttag atgatgccag tgaaagagat 480
 tttctcaagt tgacattaga gaattacgtg aaaaatttag aagtgccagt aaaaattatt 540
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 gggcagggtca taacttttct tgatgcacac tgtgaatgca cgttaggatg gctggagcct 660
 ttgctggcaa gaataaagga agacaggaaa acggttgtct gccctatcat tgatgtgatt 720
 agtgatgata cttttgaata tatggctggg tcagacatga cttatggggg ttttaactgg 780
 aaactgaatt tccgctggta tcctgttccc caaagagaaa tggacaggag gaaaggagac 840
 agaacattac ctgtcaggac ccctactatg gctggtggcc tattttctat tgacagaaac 900
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 atcaacaaga acaacaggag actggcagaa gtttggtatg atgaatttaa agatttcttc 1140
 tacatcatat ccccagggtg tgtcaaagtg gattatggag atgtgtcagt cagaaaaaca 1200
 ctaagagaaa atctgaagtg taagcccttt tcttggtacc tagaaaacat ctatccggac 1260
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 tgcttggtatg tttctagact caatggacct gtaatcatgt taaaatgcca ccatatgaga 1500
 ggaaatcagt tatgggaata tgatgctgag agactcacgt tgcgacatgt taacagtaac 1560
 caatgtctcg atgaaccttc tgaagaagac aaaatggtgc ctacaatgca ggactgtagt 1620
 ggaagcagat cccaacagtg gctgctaagg aacatgacct tgggcacatg a 1671

<210> 59
 <211> 556
 <212> PRT
 <213> Homo sapiens
 <400> 59

Met Arg Arg Phe Val Tyr Cys Lys Val Val Leu Ala Thr Ser Leu Met
1 5 10 15

Trp Val Leu Val Asp Val Phe Leu Leu Leu Tyr Phe Ser Glu Cys Asn
20 25 30

Lys Cys Asp Asp Lys Lys Glu Arg Ser Leu Leu Pro Ala Leu Arg Ala
35 40 45

Val Ile Ser Arg Asn Gln Glu Gly Pro Gly Glu Met Gly Lys Ala Val
50 55 60

Leu Ile Pro Lys Asp Asp Gln Glu Lys Met Lys Glu Leu Phe Lys Ile
65 70 75 80

Asn Gln Phe Asn Leu Met Ala Ser Asp Leu Ile Ala Leu Asn Arg Ser
85 90 95

Leu Pro Asp Val Arg Leu Glu Gly Cys Lys Thr Lys Val Tyr Pro Asp
100 105 110

Glu Leu Pro Asn Thr Ser Val Val Ile Val Phe His Asn Glu Ala Trp
115 120 125

Ser Thr Leu Leu Arg Thr Val Tyr Ser Val Ile Asn Arg Ser Pro His
130 135 140

Tyr Leu Leu Ser Glu Val Ile Leu Val Asp Asp Ala Ser Glu Arg Asp
145 150 155 160

Phe Leu Lys Leu Thr Leu Glu Asn Tyr Val Lys Asn Leu Glu Val Pro
165 170 175

Val Lys Ile Ile Arg Met Glu Glu Arg Ser Gly Leu Ile Arg Ala Arg
180 185 190

Leu Arg Gly Ala Ala Ala Ser Lys Gly Gln Val Ile Thr Phe Leu Asp
195 200 205

Ala His Cys Glu Cys Thr Leu Gly Trp Leu Glu Pro Leu Leu Ala Arg
210 215 220

Ile Lys Glu Asp Arg Lys Thr Val Val Cys Pro Ile Ile Asp Val Ile
225 230 235 240

Ser Asp Asp Thr Phe Glu Tyr Met Ala Gly Ser Asp Met Thr Tyr Gly
245 250 255

Gly Phe Asn Trp Lys Leu Asn Phe Arg Trp Tyr Pro Val Pro Gln Arg
260 265 270

Glu Met Asp Arg Arg Lys Gly Asp Arg Thr Leu Pro Val Arg Thr Pro
275 280 285

Thr Met Ala Gly Gly Leu Phe Ser Ile Asp Arg Asn Tyr Phe Glu Glu
290 295 300

Ile Gly Thr Tyr Asp Ala Gly Met Asp Ile Trp Gly Gly Glu Asn Leu
305 310 315 320

Glu Met Ser Phe Arg Ile Trp Gln Cys Gly Gly Ser Leu Glu Ile Val
325 330 335

Thr Cys Ser His Val Gly His Val Phe Arg Lys Ala Thr Pro Tyr Thr
340 345 350

Phe Pro Gly Gly Thr Gly His Val Ile Asn Lys Asn Asn Arg Arg Leu
355 360 365

Ala Glu Val Trp Met Asp Glu Phe Lys Asp Phe Phe Tyr Ile Ile Ser
370 375 380

Pro Gly Val Val Lys Val Asp Tyr Gly Asp Val Ser Val Arg Lys Thr
385 390 395 400

Leu Arg Glu Asn Leu Lys Cys Lys Pro Phe Ser Trp Tyr Leu Glu Asn
405 410 415

Ile Tyr Pro Asp Ser Gln Ile Pro Arg Arg Tyr Tyr Ser Leu Gly Glu
420 425 430

Ile Arg Asn Val Glu Thr Asn Gln Cys Leu Asp Asn Met Gly Arg Lys
435 440 445

Glu Asn Glu Lys Val Gly Ile Phe Asn Cys His Gly Met Gly Gly Asn
450 455 460

Gln Val Phe Ser Tyr Thr Ala Asp Lys Glu Ile Arg Thr Asp Asp Leu
465 470 475 480

Cys Leu Asp Val Ser Arg Leu Asn Gly Pro Val Ile Met Leu Lys Cys
485 490 495

His His Met Arg Gly Asn Gln Leu Trp Glu Tyr Asp Ala Glu Arg Leu
500 505 510

Thr Leu Arg His Val Asn Ser Asn Gln Cys Leu Asp Glu Pro Ser Glu
515 520 525

Glu Asp Lys Met Val Pro Thr Met Gln Asp Cys Ser Gly Ser Arg Ser
530 535 540

Gln Gln Trp Leu Leu Arg Asn Met Thr Leu Gly Thr
545 550 555
31

<210> 60
 <211> 1911
 <212> DNA
 <213> Homo sapiens

<400> 60
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 ctgctgttct tctgggtaac caagaggaag ttggaggtgc cgacgggacc tgaagtgcag 120
 acccctaagc cttcggacgc tgactgggac gacctgtggg accagtttga tgagcggcgg 180
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 aacgaagccc gctccacgct gctcaggacc atccgcagtg tattaaccg caccctacg 420
 catctgatcc gggaaatcat attagtggat gacttcagca atgaccctga tgactgtaaa 480
 cagctcatca aattgcccaa ggtgaaatgc ttgcgcaata atgaacggca aggtctggtc 540
 cgggtcccga ttcggggcgc tgacatcgcc cagggcacca ctctgacttt cctcgacagc 600
 cactgtgagg tgaacaggga ctggctccag cctctgttgc acaggggtcaa agaagactac 660
 acgcgggtgg tgtgccctgt gatcgatc attaacctgg acaccttcac ctacatcgag 720
 tctgcctcgg agctcagagg ggggtttgac tggagcctcc acttccagtg ggagcagctc 780
 tccccagagc agaagctcgg cgcctggacc ccacggaagc ccatcaggac tcctatcata 840
 gctggagggc tcttcgtgat cgacaaagct tggtttgatt acctggggaa atatgatatg 900
 gacatggaca tctgggggtg ggagaacttt gaaatctcct tccgagtgtg gatgtgcggg 960
 ggcagcctag agatcgtccc ctgcagccga gtggggcacg tcttccggaa gaagcacccc 1020
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 gtgtggatgg atgaatacaa gcaatactat tacgctgccc ggccattcgc cctggagagg 1140
 cccttcggga atgttgagag cagattggac ctgaggaaga atctgcgctg ccagagcttc 1200
 aagtgggtacc tggagaatat ctaccctgaa ctgagcatcc ccaaggagtc ctccatccag 1260
 aagggcaata tccgacagag acagaagtgc ctggaatctc aaaggcagaa caaccaagaa 1320
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 gtatgggcct tcacatacac ccagcagatc ctccaggagg agctgtgcct gtcagtcatc 1440
 acctgtttcc ctggcgcccc agtggttctt gtcctttgca agaattggaga tgaccgacag 1500
 caatggacca aaactggttc ccacatcgag cacatagcat cccacctctg cctcgatata 1560
 gatatgttcg gtgatggcac cgagaacggc aaggaaatcg tcgtcaaccc atgtgagtcc 1620
 tcactcatga gccagcactg ggacatggtg agctcttgag gaccctgcc agaagcagca 1680

agggccatgg ggtggtgctt ccctggacca gaacagactg gaaactgggc agcaagcagc 1740
 ctgcaaccac ctcagacatc ctggactggg aggtggaggc agagcccccc aggacaggag 1800
 caactgtctc agggaggaca gaggaaaaca tcacaagcca atggggctca aagacaaatc 1860
 ccacatgttc tcaaggccgt taagttccag tcctggccag tcattccctg a 1911

<210> 61
 <211> 552
 <212> PRT
 <213> Homo sapiens

<400> 61

Met Arg Arg Leu Thr Arg Arg Leu Val Leu Pro Val Phe Gly Val Leu
1 5 10 15

Trp Ile Thr Val Leu Leu Phe Phe Trp Val Thr Lys Arg Lys Leu Glu
20 25 30

Val Pro Thr Gly Pro Glu Val Gln Thr Pro Lys Pro Ser Asp Ala Asp
35 40 45

Trp Asp Asp Leu Trp Asp Gln Phe Asp Glu Arg Arg Tyr Leu Asn Ala
50 55 60

Lys Lys Trp Arg Val Gly Asp Asp Pro Tyr Lys Leu Tyr Ala Phe Asn
65 70 75 80

Gln Arg Glu Ser Glu Arg Ile Ser Ser Asn Arg Ala Ile Pro Asp Thr
85 90 95

Arg His Leu Arg Cys Thr Leu Leu Val Tyr Cys Thr Asp Leu Pro Pro
100 105 110

Thr Ser Ile Ile Ile Thr Phe His Asn Glu Ala Arg Ser Thr Leu Leu
115 120 125

Arg Thr Ile Arg Ser Val Leu Asn Arg Thr Pro Thr His Leu Ile Arg
130 135 140

Glu Ile Ile Leu Val Asp Asp Phe Ser Asn Asp Pro Asp Asp Cys Lys
145 150 155 160

Gln Leu Ile Lys Leu Pro Lys Val Lys Cys Leu Arg Asn Asn Glu Arg
165 170 175

Gln Gly Leu Val Arg Ser Arg Ile Arg Gly Ala Asp Ile Ala Gln Gly
180 185 190

Thr Thr Leu Thr Phe Leu Asp Ser His Cys Glu Val Asn Arg Asp Trp
 195 200 205
 Leu Gln Pro Leu Leu His Arg Val Lys Glu Asp Tyr Thr Arg Val Val
 210 215 220
 Cys Pro Val Ile Asp Ile Ile Asn Leu Asp Thr Phe Thr Tyr Ile Glu
 225 230 235 240
 Ser Ala Ser Glu Leu Arg Gly Gly Phe Asp Trp Ser Leu His Phe Gln
 245 250 255
 Trp Glu Gln Leu Ser Pro Glu Gln Lys Leu Gly Ala Trp Thr Pro Arg
 260 265 270
 Lys Pro Ile Arg Thr Pro Ile Ile Ala Gly Gly Leu Phe Val Ile Asp
 275 280 285
 Lys Ala Trp Phe Asp Tyr Leu Gly Lys Tyr Asp Met Asp Met Asp Ile
 290 295 300
 Trp Gly Gly Glu Asn Phe Glu Ile Ser Phe Arg Val Trp Met Cys Gly
 305 310 315 320
 Gly Ser Leu Glu Ile Val Pro Cys Ser Arg Val Gly His Val Phe Arg
 325 330 335
 Lys Lys His Pro Tyr Val Phe Pro Asp Gly Asn Ala Asn Thr Tyr Ile
 340 345 350
 Lys Asn Thr Lys Arg Thr Ala Glu Val Trp Met Asp Glu Tyr Lys Gln
 355 360 365
 Tyr Tyr Tyr Ala Ala Arg Pro Phe Ala Leu Glu Arg Pro Phe Gly Asn
 370 375 380
 Val Glu Ser Arg Leu Asp Leu Arg Lys Asn Leu Arg Cys Gln Ser Phe
 385 390 395 400
 Lys Trp Tyr Leu Glu Asn Ile Tyr Pro Glu Leu Ser Ile Pro Lys Glu
 405 410 415
 Ser Ser Ile Gln Lys Gly Asn Ile Arg Gln Arg Gln Lys Cys Leu Glu
 420 425 430
 Ser Gln Arg Gln Asn Asn Gln Glu Thr Pro Asn Leu Lys Leu Ser Pro
 435 440 445

Cys Ala Lys Val Lys Gly Glu Asp Ala Lys Ser Gln Val Trp Ala Phe
 450 455 460

Thr Tyr Thr Gln Gln Ile Leu Gln Glu Glu Leu Cys Leu Ser Val Ile
 465 470 475 480

Thr Leu Phe Pro Gly Ala Pro Val Val Leu Val Leu Cys Lys Asn Gly
 485 490 495

Asp Asp Arg Gln Gln Trp Thr Lys Thr Gly Ser His Ile Glu His Ile
 500 505 510

Ala Ser His Leu Cys Leu Asp Thr Asp Met Phe Gly Asp Gly Thr Glu
 515 520 525

Asn Gly Lys Glu Ile Val Val Asn Pro Cys Glu Ser Ser Leu Met Ser
 530 535 540

Gln His Trp Asp Met Val Ser Ser
 545 550

<210> 62
 <211> 1677
 <212> DNA
 <213> Homo sapiens

<400> 62
 atgaggaaga tccgcgccaa tgccatcgcc atcctgaccg tagcctggat cctgggcact 60
 ttctactact tatggcagga caaccgagcc cacgcagcat cctccggcgg ccggggcgcg 120
 cagagggcag gcaggaggtc ggagcagctc cgcgaggacc gcaccatccc gctcattgtg 180
 acaggaactc cctcgaaagg ctttgatgag aaggcctacc tgtcggccaa gcagctgaag 240
 gctggagagg acccctacag acagcacgcc ttcaaccagc tggagagtga caagctgagc 300
 ccagaccggc ccatccggga caccgcctat tacagctgcc catctgtgtc ctactcctcg 360
 gacctgccag ccaccagcgt catcatcacc ttccacaatg aggcccgttc caccctgctg 420
 cgcacagtga agagtgtcct gaaccgaact cctgccaaact tgatccagga gatcatttta 480
 gtggatgact tcagctcaga tccggaagac tgtctactcc tgaccaggat cccaaggtc 540
 aagtgcctgc gcaatgatcg gcgggaaggg ctgatccggc cccgagtgcg tggggcggac 600
 gtggctgcag ctaccgttct cacctttctg gatagccact gcgaagtga caccgagtgg 660
 ctgccgcca tgctgcagcg ggtgaaggag gaccacacc gcgtggtgag tcccatcatt 720
 gatgtcatca gtctggataa ttttgcttac cttgcagcat ctgctgacct tcgtggaggg 780
 ttcgactgga gcctgcattt caagtgggag cagatccctc ttgagcagaa gatgaccggg 840
 acagacccca ccaggcccat aaggacgcct gtcatagctg gaggaatctt cgtgatcgac 900

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aagtcctggg ttaaccactt gggaaagtat gatgcccaga tggacatctg ggggggagag 960
aattttgagc tctccttcag ggtgtggatg tgtggtggca gtctggagat cgtcccctgc 1020
agccgggtgg gccatgtctt caggaaacgg caccctaca acttccctga gggtaatgcc 1080
ctcacctaca tcaggaatac taagcgact gcagaagtgt ggatggatga atacaagcaa 1140
tactactatg aggcccggcc ctcgccatc gggaaggcct tcggcagtgt ggctacgcgg 1200
atagagcaga ggaagaagat gaactgcaag tccttccgct ggtacctgga gaacgtctac 1260
ccagagctca cggccccgt gaaggaagca ctccccggca tcattaagca gggggtgaaac 1320
tgcttagaat ctcagggccca gaacacagct ggtgacttcc tgcttggaat ggggatctgc 1380
agaggggtctg ccaagaaccc gcagcccgcc caggcatggc tgttcagtga ccacctcatc 1440
cagcagcagg ggaagtgcct ggctgccacc tccaccttaa tgcctcccc tggatcccca 1500
gtcatactgc agatgtgcaa ccctagagaa ggcaagcaga aatggaggag aaaaggatct 1560
ttcatccagc attcagtcag tggcctctgc ctggagacaa agcctgcccc gctggtgacc 1620
agcaagtgtc aggctgacgc ccaggcccag cagtggcagc tgttgccaca cacatga 1677

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<210> 63
<211> 558
<212> PRT
<213> Homo sapiens

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<400> 63
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Met Arg Lys Ile Arg Ala Asn Ala Ile Ala Ile Leu Thr Val Ala Trp
1           5           10           15

```

```

Ile Leu Gly Thr Phe Tyr Tyr Leu Trp Gln Asp Asn Arg Ala His Ala
20           25           30

```

```

Ala Ser Ser Gly Gly Arg Gly Ala Gln Arg Ala Gly Arg Arg Ser Glu
35           40           45

```

```

Gln Leu Arg Glu Asp Arg Thr Ile Pro Leu Ile Val Thr Gly Thr Pro
50           55           60

```

```

Ser Lys Gly Phe Asp Glu Lys Ala Tyr Leu Ser Ala Lys Gln Leu Lys
65           70           75           80

```

```

Ala Gly Glu Asp Pro Tyr Arg Gln His Ala Phe Asn Gln Leu Glu Ser
85           90           95

```

```

Asp Lys Leu Ser Pro Asp Arg Pro Ile Arg Asp Thr Arg His Tyr Ser
100          105          110

```

```

Cys Pro Ser Val Ser Tyr Ser Ser Asp Leu Pro Ala Thr Ser Val Ile
115          120          125

```

Ile Thr Phe His Asn Glu Ala Arg Ser Thr Leu Leu Arg Thr Val Lys
 130 135 140
 Ser Val Leu Asn Arg Thr Pro Ala Asn Leu Ile Gln Glu Ile Ile Leu
 145 150 155 160
 Val Asp Asp Phe Ser Ser Asp Pro Glu Asp Cys Leu Leu Leu Thr Arg
 165 170 175
 Ile Pro Lys Val Lys Cys Leu Arg Asn Asp Arg Arg Glu Gly Leu Ile
 180 185 190
 Arg Ser Arg Val Arg Gly Ala Asp Val Ala Ala Ala Thr Val Leu Thr
 195 200 205
 Phe Leu Asp Ser His Cys Glu Val Asn Thr Glu Trp Leu Pro Pro Met
 210 215 220
 Leu Gln Arg Val Lys Glu Asp His Thr Arg Val Val Ser Pro Ile Ile
 225 230 235 240
 Asp Val Ile Ser Leu Asp Asn Phe Ala Tyr Leu Ala Ala Ser Ala Asp
 245 250 255
 Leu Arg Gly Gly Phe Asp Trp Ser Leu His Phe Lys Trp Glu Gln Ile
 260 265 270
 Pro Leu Glu Gln Lys Met Thr Arg Thr Asp Pro Thr Arg Pro Ile Arg
 275 280 285
 Thr Pro Val Ile Ala Gly Gly Ile Phe Val Ile Asp Lys Ser Trp Phe
 290 295 300
 Asn His Leu Gly Lys Tyr Asp Ala Gln Met Asp Ile Trp Gly Gly Glu
 305 310 315 320
 Asn Phe Glu Leu Ser Phe Arg Val Trp Met Cys Gly Gly Ser Leu Glu
 325 330 335
 Ile Val Pro Cys Ser Arg Val Gly His Val Phe Arg Lys Arg His Pro
 340 345 350
 Tyr Asn Phe Pro Glu Gly Asn Ala Leu Thr Tyr Ile Arg Asn Thr Lys
 355 360 365
 Arg Thr Ala Glu Val Trp Met Asp Glu Tyr Lys Gln Tyr Tyr Tyr Glu
 370 375 380

Ala Arg Pro Ser Ala Ile Gly Lys Ala Phe Gly Ser Val Ala Thr Arg
385 390 395 400

Ile Glu Gln Arg Lys Lys Met Asn Cys Lys Ser Phe Arg Trp Tyr Leu
405 410 415

Glu Asn Val Tyr Pro Glu Leu Thr Val Pro Val Lys Glu Ala Leu Pro
420 425 430

Gly Ile Ile Lys Gln Gly Val Asn Cys Leu Glu Ser Gln Gly Gln Asn
435 440 445

Thr Ala Gly Asp Phe Leu Leu Gly Met Gly Ile Cys Arg Gly Ser Ala
450 455 460

Lys Asn Pro Gln Pro Ala Gln Ala Trp Leu Phe Ser Asp His Leu Ile
465 470 475 480

Gln Gln Gln Gly Lys Cys Leu Ala Ala Thr Ser Thr Leu Met Ser Ser
485 490 495

Pro Gly Ser Pro Val Ile Leu Gln Met Cys Asn Pro Arg Glu Gly Lys
500 505 510

Gln Lys Trp Arg Arg Lys Gly Ser Phe Ile Gln His Ser Val Ser Gly
515 520 525

Leu Cys Leu Glu Thr Lys Pro Ala Gln Leu Val Thr Ser Lys Cys Gln
530 535 540

Ala Asp Ala Gln Ala Gln Gln Trp Gln Leu Leu Pro His Thr
545 550 555

<210> 64
<211> 33
<212> DNA
<213> Artificial sequence

<220>
<223> PCR primer

<400> 64
caaaggaagc ttatggagat atatcgtcaa gag

33

<210> 65
<211> 43
<212> DNA
<213> Artificial sequence

<220>

<223> PCR primer
 <400> 65
 gcaagctcga ggcggccgct cagaatattt ctggaagggt gac 43

 <210> 66
 <211> 37
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> PCR primer
 <400> 66
 caaggaagct tcttatggaa atattcagag cagattg 37

 <210> 67
 <211> 38
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> PCR primer
 <400> 67
 gcaagctcga ggcggccgcc tactgctgca ggttgagc 38

 <210> 68
 <211> 37
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> PCR primer
 <400> 68
 caaggaagct tcatttggtg atctttcaaa aagattt 37

 <210> 69
 <211> 40
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> PCR primer
 <400> 69
 gcaagctcga ggcggccgca ggaacactta atcattttgg 40

 <210> 70
 <211> 28
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> PCR primer
 <400> 70
 agaaaagaag cttatggtga tatttctg 28

<210> 71
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer

<400> 71
agcggatccg acgaagtgct gttgtgct

28

<210> 72
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer

<400> 72
caaggaagct ttagatgttg gcaacctcac ccagc

35

<210> 73
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer

<400> 73
gcaagctcga ggcggccgca agcatcagtt acacttcagg cttc

44

<210> 74
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer

<400> 74
caaggaagct tccttcggtg acatttcgga acg

33

<210> 75
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer

<400> 75
gcaagctcga ggcggccgct gggtcctaga caaagagcc

39

<210> 76
<211> 33

<212> DNA
 <213> Artificial Sequence
 <220>
 <223> PCR primer
 <400> 76
 agaaaagaag cttatgggga tatatcggag ctg 33

<210> 77
 <211> 44
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> PCR primer
 <400> 77
 gcaagctcga ggcggccgct ctctaaacac tatggatggtt attc 44

<210> 78
 <211> 34
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> PCR primer
 <400> 78
 caaggaagct tttggagacg tttcttccag aatg 34

<210> 79
 <211> 42
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> PCR primer
 <400> 79
 gcaagctcga ggcggccgct cactggctgt tggctctgacc cc 42

<210> 80
 <211> 34
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> PCR primer
 <400> 80
 caaggaagct ttcggggacg tgtctgagag gctg 34

<210> 81
 <211> 42
 <212> DNA
 <213> Artificial Sequence
 <220>

<223> PCR primer
 <400> 81
 gcaagctcga ggcggccgct cagtgccgtg cgtgtttgat cc 42

 <210> 82
 <211> 34
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> PCR primer
 <400> 82
 caaggaagct tccgctgggg atgtcgagcag ccag 34

 <210> 83
 <211> 41
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> PCR primer
 <400> 83
 gcaagctcga ggcggccgct cagttcctat tgaatttttc c 41

 <210> 84
 <211> 32
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> PCR primer
 <400> 84
 caaggaagct tgcaatatca gtgagcgtgt gg 32

 <210> 85
 <211> 40
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> PCR primer
 <400> 85
 gcaagctcga ggcggccgcc caccttaacc ttccaaatgc 40

 <210> 86
 <211> 31
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> PCR primer
 <400> 86
 caaggaagct tgggatgtga cagagaggaa g 31

<210> 87
 <211> 45
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> PCR primer

 <400> 87
 gcaagctcga ggcggccgct cataacatgc gctctttgaa gaacc 45

 <210> 88
 <211> 32
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> PCR primer

 <400> 88
 caaggaagct tctgagaagc cagactgcat gg 32

 <210> 89
 <211> 41
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> PCR primer

 <400> 89
 gcaagctcga ggcggccgct catcgttcat ccacagcatt g 41

 <210> 90
 <211> 36
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> PCR primer

 <400> 90
 caaggaagct tatggagatg tgtcagtcag aaaaac 36

 <210> 91
 <211> 42
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> PCR primer

 <400> 91
 gcaagctcga ggcggccgct catgtgccca aggtcatgtt cc 42

 <210> 92
 <211> 34

<212> DNA
 <213> Artificial Sequence
 <220>
 <223> PCR primer
 <400> 92
 caaggaagct ttcgggaatg ttgagagcag attg 34

<210> 93
 <211> 43
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> PCR primer
 <400> 93
 gcaagctcga ggcggccgct caagaactca ccatgtccca gtg 43

<210> 94
 <211> 40
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> PCR primer
 <400> 94
 caaggaagct tgcagtgtgg ctacgcggat agagcagagg 40

<210> 95
 <211> 42
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> PCR primer
 <400> 95
 gcaagctcga ggcggccgct catgtgtgtg gcaacagctg cc 42

<210> 96
 <211> 513
 <212> DNA
 <213> Homo sapiens
 <400> 96
 aaagaagctt atggagatat atcgtcaaga gttgggtctaa gacacaaact acaatgcaaa 60
 cctttttcct ggtacctaga gaatatatat cctgattctc aaattccacg tcactatttc 120
 tcattgggag agatacgaag tgtggaaacg aatcagtgtc tagataacat ggctagaaaa 180
 gagaatgaaa aagttggaat ttttaattgc catggtatgg ggggtaatca ggttttctct 240
 tatactgcc acaaagaaat tagaacagat gacctttgct tggatgtttc caaacttaat 300
 ggcccagtta caatgctcaa atgccaccac ctaaaaggca accaactctg ggagtatgac 360

ccagtgaat taaccctgca gcatgtgaac agtaatcagt gcctggataa agccacagaa 420
gaggatagcc aggtgcccag cattagagac tgcaatggaa gtcggtccca gcagtggctt 480
cttcgaaacg tcacccttcc agaaatattc tga 513

<210> 97
<211> 167
<212> PRT
<213> Homo sapiens

<400> 97

Tyr Gly Asp Ile Ser Ser Arg Val Gly Leu Arg His Lys Leu Gln Cys
1 5 10 15

Lys Pro Phe Ser Trp Tyr Leu Glu Asn Ile Tyr Pro Asp Ser Gln Ile
20 25 30

Pro Arg His Tyr Phe Ser Leu Gly Glu Ile Arg Asn Val Glu Thr Asn
35 40 45

Gln Cys Leu Asp Asn Met Ala Arg Lys Glu Asn Glu Lys Val Gly Ile
50 55 60

Phe Asn Cys His Gly Met Gly Gly Asn Gln Val Phe Ser Tyr Thr Ala
65 70 75 80

Asn Lys Glu Ile Arg Thr Asp Asp Leu Cys Leu Asp Val Ser Lys Leu
85 90 95

Asn Gly Pro Val Thr Met Leu Lys Cys His His Leu Lys Gly Asn Gln
100 105 110

Leu Trp Glu Tyr Asp Pro Val Lys Leu Thr Leu Gln His Val Asn Ser
115 120 125

Asn Gln Cys Leu Asp Lys Ala Thr Glu Glu Asp Ser Gln Val Pro Ser
130 135 140

Ile Arg Asp Cys Asn Gly Ser Arg Ser Gln Gln Trp Leu Leu Arg Asn
145 150 155 160

Val Thr Leu Pro Glu Ile Phe
165

<210> 98
<211> 417
<212> DNA
<213> Homo sapiens

<400> 98

tatccagagt taaggggtcc agaccatcag gatatagctt ttggggcctt gcagcagggg	60
actaactgcc tcgacacttt gggacacttt gctgatggtg tggttggagt ttatgaatgt	120
cacaatgctg ggggaaacca ggaatgggcc ttgacgaagg agaagtcggt gaagcacatg	180
gatttgtgcc ttactgtggt ggaccgggca cccggctctc ttataaagct gcagggctgc	240
cgagaaaatg acagcagaca gaaatgggaa cagatcgagg gcaactccaa gctgaggcac	300
gtgggcagca acctgtgcct ggacagtcgc acggccaaga gcgggggcct aagcgtggag	360
gtgtgtggcc cggccctttc gcagcagtgg aagttcacgc tcaacctgca gcagtag	417

<210> 99
 <211> 138
 <212> PRT
 <213> Homo sapiens
 <400> 99

Tyr	Pro	Glu	Leu	Arg	Val	Pro	Asp	His	Gln	Asp	Ile	Ala	Phe	Gly	Ala	1	5	10	15
Leu	Gln	Gln	Gly	Thr	Asn	Cys	Leu	Asp	Thr	Leu	Gly	His	Phe	Ala	Asp	20	25	30	
Gly	Val	Val	Gly	Val	Tyr	Glu	Cys	His	Asn	Ala	Gly	Gly	Asn	Gln	Glu	35	40	45	
Trp	Ala	Leu	Thr	Lys	Glu	Lys	Ser	Val	Lys	His	Met	Asp	Leu	Cys	Leu	50	55	60	
Thr	Val	Val	Asp	Arg	Ala	Pro	Gly	Ser	Leu	Ile	Lys	Leu	Gln	Gly	Cys	65	70	75	80
Arg	Glu	Asn	Asp	Ser	Arg	Gln	Lys	Trp	Glu	Gln	Ile	Glu	Gly	Asn	Ser	85	90	95	
Lys	Leu	Arg	His	Val	Gly	Ser	Asn	Leu	Cys	Leu	Asp	Ser	Arg	Thr	Ala	100	105	110	
Lys	Ser	Gly	Gly	Leu	Ser	Val	Glu	Val	Cys	Gly	Pro	Ala	Leu	Ser	Gln	115	120	125	
Gln	Trp	Lys	Phe	Thr	Leu	Asn	Leu	Gln	Gln	130	135								

<210> 100
 <211> 507
 <212> DNA
 <213> Homo sapiens
 <400> 100

tcatttggtg atctttcaaa aagatttgaa ataaaacacc gtcttcggtg taaaaatttt	60
acatggtatc tgaacaacat ttatccagag gtgtatgtgc cagaccttaa tcctgttata	120
tctggataca ttaaaagcgt tggtcagcct ctatgtctgg atgttggaga aaacaatcaa	180
ggaggcaaac cattaattat gtatacatgt catggacttg ggggaaacca gtactttgaa	240
tactctgctc aacatgaaat tcggcacaac atccagaagg aattatgtct tcatgctgct	300
caaggtctcg ttcagctgaa ggcattgtacc tacaaaggtc acaagacagt tgtcactgga	360
gagcagatat gggagatcca gaaggatcaa cttctataca atccattctt aaaaatgtgc	420
ctttcagcaa atggagagca tccaagttta gtgtcatgca acccatcaga tccactccaa	480
aaatggatac ttagccaaaa tgattaa	507

<210> 101
 <211> 167
 <212> PRT
 <213> Homo sapiens

<400> 101

Phe	Gly	Asp	Leu	Ser	Lys	Arg	Phe	Glu	Ile	Lys	His	Arg	Leu	Arg	Cys
1				5				10					15		

Lys	Asn	Phe	Thr	Trp	Tyr	Leu	Asn	Asn	Ile	Tyr	Pro	Glu	Val	Tyr	Val
			20					25					30		

Pro	Asp	Leu	Asn	Pro	Val	Ile	Ser	Gly	Tyr	Ile	Lys	Ser	Val	Gly	Gln
		35					40					45			

Pro	Leu	Cys	Leu	Asp	Val	Gly	Glu	Asn	Asn	Gln	Gly	Gly	Lys	Pro	Leu
	50					55					60				

Ile	Met	Tyr	Thr	Cys	His	Gly	Leu	Gly	Gly	Asn	Gln	Tyr	Phe	Glu	Tyr
65					70					75					80

Ser	Ala	Gln	His	Glu	Ile	Arg	His	Asn	Ile	Gln	Lys	Glu	Leu	Cys	Leu
				85					90					95	

His	Ala	Ala	Gln	Gly	Leu	Val	Gln	Leu	Lys	Ala	Cys	Thr	Tyr	Lys	Gly
			100					105					110		

His	Lys	Thr	Val	Val	Thr	Gly	Glu	Gln	Ile	Trp	Glu	Ile	Gln	Lys	Asp
		115					120					125			

Gln	Leu	Leu	Tyr	Asn	Pro	Phe	Leu	Lys	Met	Cys	Leu	Ser	Ala	Asn	Gly
	130					135					140				

Glu	His	Pro	Ser	Leu	Val	Ser	Cys	Asn	Pro	Ser	Asp	Pro	Leu	Gln	Lys
145					150					155					160
										47					

Trp Ile Leu Ser Gln Asn Asp
165

<210> 102
<211> 423
<212> DNA
<213> Homo sapiens

<400> 102
gaggatagac caggctggca tggggctatt cgtagtagag ggatctcgtc tgaatgttta 60
gattataatt ctcctgacaa caaccccaca ggtgctaacc ttctactgtt tggatgccat 120
ggtcaaggag gcaatcaatt ctttgaatat acttcaaaca aagaaataag gtttaattct 180
gtgacagagt tatgtgcaga ggtacctgag caaaaaaatt atgtgggaat gcaaaattgt 240
cccaaagatg ggttccctgt accagcaaac attatttggc attttaaaga agatggaact 300
atttttcacc cacactcagg actgtgtctt agtgcttatc ggacaccgga gggccgacct 360
gatgtacaaa tgagaacttg tgatgctcta gataaaaatc aaatttggag ttttgagaaa 420
tag 423

<210> 103
<211> 174
<212> PRT
<213> Homo sapiens

<400> 103

Ala Tyr Gly Asp Ile Ser Glu Arg Lys Leu Leu Arg Glu Arg Leu Arg
1 5 10 15

Cys Lys Ser Phe Asp Trp Tyr Leu Lys Asn Val Phe Pro Asn Leu His
20 25 30

Val Pro Glu Asp Arg Pro Gly Trp His Gly Ala Ile Arg Ser Arg Gly
35 40 45

Ile Ser Ser Glu Cys Leu Asp Tyr Asn Ser Pro Asp Asn Asn Pro Thr
50 55 60

Gly Ala Asn Leu Ser Leu Phe Gly Cys His Gly Gln Gly Gly Asn Gln
65 70 75 80

Phe Phe Glu Tyr Thr Ser Asn Lys Glu Ile Arg Phe Asn Ser Val Thr
85 90 95

Glu Leu Cys Ala Glu Val Pro Glu Gln Lys Asn Tyr Val Gly Met Gln
100 105 110

Asn Cys Pro Lys Asp Gly Phe Pro Val Pro Ala Asn Ile Ile Trp His
115 120 125

Phe Lys Glu Asp Gly Thr Ile Phe His Pro His Ser Gly Leu Cys Leu
130 135 140

Ser Ala Tyr Arg Thr Pro Glu Gly Arg Pro Asp Val Gln Met Arg Thr
145 150 155 160

Cys Asp Ala Leu Asp Lys Asn Gln Ile Trp Ser Phe Glu Lys
165 170

<210> 104
<211> 510
<212> DNA
<213> Homo sapiens

<400> 104
ttagatgttg gcaacctcac ccagcaaagg gagctgcgaa agaaactgaa gtgcaaaagt 60
ttcaaagtgt acttgagagaa tgtctttcct gacttaaggg ctcccattgt gagagctagt 120
gggtgtgctta ttaatgtggc tttgggtaaa tgcattttcca ttgaaaacac tacagtcatt 180
ctggaagact gcgatgggag caaagagctt caacaattta attacacctg gttaagactt 240
attaaatgtg gagaatggtg tatagcccc atccctgata aaggagccgt aaggctgcac 300
ccttgatgata acagaaacaa agggctaaaa tggctgcata aatcaacatc agtctttcat 360
ccagaactgg tgaatcacat tgtttttgaa aacaatcagc aattattatg cttggaagga 420
aatttttctc aaaagatcct gaaagtagct gcctgtgacc cagtgaagcc atatcaaaag 480
tggaatttg aaaaatatta tgaagcctga 510

<210> 105
<211> 168
<212> PRT
<213> Homo sapiens

<400> 105
Asp Val Gly Asn Leu Thr Gln Gln Arg Glu Leu Arg Lys Lys Leu Lys
1 5 10 15

Cys Lys Ser Phe Lys Trp Tyr Leu Glu Asn Val Phe Pro Asp Leu Arg
20 25 30

Ala Pro Ile Val Arg Ala Ser Gly Val Leu Ile Asn Val Ala Leu Gly
35 40 45

Lys Cys Ile Ser Ile Glu Asn Thr Thr Val Ile Leu Glu Asp Cys Asp
50 55 60

Gly Ser Lys Glu Leu Gln Gln Phe Asn Tyr Thr Trp Leu Arg Leu Ile
65 70 75 80

Lys Cys Gly Glu Trp Cys Ile Ala Pro Ile Pro Asp Lys Gly Ala Val
85 90 95

Arg Leu His Pro Cys Asp Asn Arg Asn Lys Gly Leu Lys Trp Leu His
100 105 110

Lys Ser Thr Ser Val Phe His Pro Glu Leu Val Asn His Ile Val Phe
115 120 125

Glu Asn Asn Gln Gln Leu Leu Cys Leu Glu Gly Asn Phe Ser Gln Lys
130 135 140

Ile Leu Lys Val Ala Ala Cys Asp Pro Val Lys Pro Tyr Gln Lys Trp
145 150 155 160

Lys Phe Glu Lys Tyr Tyr Glu Ala
165

<210> 106
<211> 498
<212> DNA
<213> Homo sapiens

<400> 106
tccttcggtg acatttcgga acgactgcag ctgaggggaac aactgcactg tcacaacttt 60
tccttggtacc tgcacaatgt ctaccagag atgtttgttc ctgacctgac gccaccttc 120
tatggtgcca tcaagaacct cggcaccaac caatgcctgg atgtgggtga gaacaaccgc 180
ggggggaagc ccctcatcat gtactcctgc cacggccttg gcggcaacca gtactttgag 240
tacacaactc agagggacct tcgccacaac atcgcaaagc agctgtgtct acatgtcagc 300
aagggtgctc tgggccttgg gagctgtcac ttactggca agaatagcca ggtccccaag 360
gacgaggaat gggaattggc ccaggatcag ctcatcagga actcaggatc tggtagctgc 420
ctgacatccc aggacaaaaa gccagccatg gccccctgca atcccagtga ccccatcag 480
ttgtggctct ttgtctag 498

<210> 107
<211> 165
<212> PRT
<213> Homo sapiens

<400> 107

Ser Phe Gly Asp Ile Ser Glu Arg Leu Gln Leu Arg Glu Gln Leu His
1 5 10 15

[illegible]

<210> 109
 <211> 166
 <212> PRT
 <213> Homo sapiens

<400> 109

Tyr Gly Asp Ile Ser Glu Leu Lys Lys Phe Arg Glu Asp His Asn Cys
 1 5 10 15

Gln Ser Phe Lys Trp Phe Met Glu Glu Ile Ala Tyr Asp Ile Thr Ser
 20 25 30

His Tyr Pro Leu Pro Pro Lys Asn Val Asp Trp Gly Glu Ile Arg Gly
 35 40 45

Phe Glu Thr Ala Tyr Cys Ile Asp Ser Met Gly Lys Thr Asn Gly Gly
 50 55 60

Phe Val Glu Leu Gly Pro Cys His Arg Met Gly Gly Asn Gln Leu Phe
 65 70 75 80

Arg Ile Asn Glu Ala Asn Gln Leu Met Gln Tyr Asp Gln Cys Leu Thr
 85 90 95

Lys Gly Ala Asp Gly Ser Lys Val Met Ile Thr His Cys Asn Leu Asn
 100 105 110

Glu Phe Lys Glu Trp Gln Tyr Phe Lys Asn Leu His Arg Phe Thr His
 115 120 125

Ile Pro Ser Gly Lys Cys Leu Asp Arg Ser Glu Val Leu His Gln Val
 130 135 140

Phe Ile Ser Asn Cys Asp Ser Ser Lys Thr Thr Gln Lys Trp Glu Met
 145 150 155 160

Asn Asn Ile His Ser Val
 165

<210> 110
 <211> 534
 <212> DNA
 <213> Homo sapiens

<400> 110

gacgttttctt ccagaatggc actccgggaa aaactgaaat gtaaaacttt tgactggtac 60

ctgaaaaaatg tttatccact cttgaagcca ctccacacca tcgtgggcta tggaagaatg 120

aaaaacctat tggatgaaaa tgtctgcttg gatcagggac ccgttccagg caacaccccc 180

atcatgtatt actgcatga attcagctca cagaatgtct actatcacct aactggggag 240
 ctctatgtgg gacaactgat tgcagaggcc agtgctagtg atcgctgcct gacagaccct 300
 ggcaaggcgg agaagcccac cttagaacca tgctccaagg cagctaagaa tagactgcat 360
 atatattggg attttaaacc gggaggagct gtcataaaca gagatacaca gcggtgtctg 420
 gagatgaaga aggatctttt gggtagccac gtgcttgtgc tccagacctg tagcacgcaa 480
 gtgtgggaaa tccagcacac tgtcagagac tggggtcaga ccaacagcca gtga 534

<210> 111
 <211> 179
 <212> PRT
 <213> Homo sapiens

<400> 111

Phe Gly Asp Val Ser Ser Arg Met Ala Leu Arg Glu Lys Leu Lys Cys
 1 5 10 15

Lys Thr Phe Asp Trp Tyr Leu Lys Asn Val Tyr Pro Leu Leu Lys Pro
 20 25 30

Leu His Thr Ile Val Gly Tyr Gly Arg Met Lys Asn Leu Leu Asp Glu
 35 40 45

Asn Val Cys Leu Asp Gln Gly Pro Val Pro Gly Asn Thr Pro Ile Met
 50 55 60

Tyr Tyr Cys His Glu Phe Ser Ser Gln Asn Val Tyr Tyr His Leu Thr
 65 70 75 80

Gly Glu Leu Tyr Val Gly Gln Leu Ile Ala Glu Ala Ser Ala Ser Asp
 85 90 95

Arg Cys Leu Thr Asp Pro Gly Lys Ala Glu Lys Pro Thr Leu Glu Pro
 100 105 110

Cys Ser Lys Ala Ala Lys Asn Arg Leu His Ile Tyr Trp Asp Phe Lys
 115 120 125

Pro Gly Gly Ala Val Ile Asn Arg Asp Thr Lys Arg Cys Leu Glu Met
 130 135 140

Lys Lys Asp Leu Leu Gly Ser His Val Leu Val Leu Gln Thr Cys Ser
 145 150 155 160

Thr Gln Val Trp Glu Ile Gln His Thr Val Arg Asp Trp Gly Gln Thr
 165 170 175

Asn Ser Gln

<210> 112
 <211> 534
 <212> DNA
 <213> Homo sapiens

<400> 112
 ttcggggacg tgtctgagag gctggccctg cgtcagaggc tgaagtgtcg cagcttcaag 60
 tggtagcttg agaactgtga cccggagatg aggggtctaca acaacaccct cacgtacgga 120
 gaggtgagaa acagcaaagc cagtgcctac tgtctggacc agggagcggg ggacggcgac 180
 cgggcatgcc tctacccttg ccacgggatg tcctccagc tggtagcgga cagcgtgac 240
 ggcctgctgc agctggggcc tctgggctcc acagccttct tgcctgactc caagtgtctg 300
 gtggatgacg gcacggggcg catgcccacc ctgaagaggt gtgaggatgt ggcgcggcca 360
 acacagcggc tgtgggactt caccagagt ggcgccattg tgagccgggc cacggggccgc 420
 tgcctggagg tggagatgtc caaagatgcc aactttgggc tccggctggt ggtacagagg 480
 tgctcggggc agaagtggat gatcagaaac tggatcaaac acgcacggca ctga 534

<210> 113
 <211> 177
 <212> PRT
 <213> Homo sapiens

<400> 113
 Phe Gly Asp Val Ser Glu Arg Leu Ala Leu Arg Gln Arg Leu Lys Cys
 1 5 10 15
 Arg Ser Phe Lys Trp Tyr Leu Glu Asn Val Tyr Pro Glu Met Arg Val
 20 25 30
 Tyr Asn Asn Thr Leu Thr Tyr Gly Glu Val Arg Asn Ser Lys Ala Ser
 35 40 45
 Ala Tyr Cys Leu Asp Gln Gly Ala Glu Asp Gly Asp Arg Ala Ile Leu
 50 55 60
 Tyr Pro Cys His Gly Met Ser Ser Gln Leu Val Arg Tyr Ser Ala Asp
 65 70 75 80
 Gly Leu Leu Gln Leu Gly Pro Leu Gly Ser Thr Ala Phe Leu Pro Asp
 85 90 95
 Ser Lys Cys Leu Val Asp Asp Gly Thr Gly Arg Met Pro Thr Leu Lys
 100 105 110

Arg Cys Glu Asp Val Ala Arg Pro Thr Gln Arg Leu Trp Asp Phe Thr
115 120
Gln Ser Gly Pro Ile Val Ser Arg Ala Thr Gly Arg Cys Leu Glu Val
130 135 140
Glu Met Ser Lys Asp Ala Asn Phe Gly Leu Arg Leu Val Val Gln Arg
145 150 155 160
Cys Ser Gly Gln Lys Trp Met Ile Arg Asn Trp Ile Lys His Ala Arg
165 170 175

His

<210> 114
<211> 564
<212> DNA
<213> Homo sapiens

<400> 114
gctggggatg tcgcaggtcca gaaaaagctc cgcagctccc ttaactgcaa gagtttcaag 60
tggtttatga cgaagatagc ctgggacctg cccaaattct acccaccgt ggagcccccg 120
gctgcagctt ggggggagat ccgaaatgtg ggcacagggc tgtgtgcaga caciaagcac 180
ggggccttgg gctccccact aaggctagag ggctgcgtcc gaggccgtgg ggaggctgcc 240
tggaacaaca tgcaggtatt caccttcacc tggagagagg acatccggcc tggagacccc 300
cagcacacca agaagttctg ctttgatgcc atttcccaca ccagccctgt cacgctgtac 360
gactgccaca gcatgaaggg caaccagctg tggaaatacc gcaaagacaa gaccctgtac 420
caccctgtca gtggcagctg catggactgc agtgaaagt accataggat cttcatgaac 480
acctgcaacc catcctctct caccagcag tggctgtttg aacacaccaa ctcaacagtc 540
ttggaaaaat tcaataggaa ctga 564

<210> 115
<211> 187
<212> PRT
<213> Homo sapiens

<400> 115

Ala Gly Asp Val Ala Val Gln Lys Lys Leu Arg Ser Ser Leu Asn Cys
1 5 10 15
Lys Ser Phe Lys Trp Phe Met Thr Lys Ile Ala Trp Asp Leu Pro Lys
20 25 30
Phe Tyr Pro Pro Val Glu Pro Pro Ala Ala Ala Trp Gly Glu Ile Arg
35 40 45

Asn Val Gly Thr Gly Leu Cys Ala Asp Thr Lys His Gly Ala Leu Gly
 50 55 60
 Ser Pro Leu Arg Leu Glu Gly Cys Val Arg Gly Arg Gly Glu Ala Ala
 65 70 75 80
 Trp Asn Asn Met Gln Val Phe Thr Phe Thr Trp Arg Glu Asp Ile Arg
 85 90 95
 Pro Gly Asp Pro Gln His Thr Lys Lys Phe Cys Phe Asp Ala Ile Ser
 100 105 110
 His Thr Ser Pro Val Thr Leu Tyr Asp Cys His Ser Met Lys Gly Asn
 115 120 125
 Gln Leu Trp Lys Tyr Arg Lys Asp Lys Thr Leu Tyr His Pro Val Ser
 130 135 140
 Gly Ser Cys Met Asp Cys Ser Glu Ser Asp His Arg Ile Phe Met Asn
 145 150 155 160
 Thr Cys Asn Pro Ser Ser Leu Thr Gln Gln Trp Leu Phe Glu His Thr
 165 170 175
 Asn Ser Thr Val Leu Glu Lys Phe Asn Arg Asn
 180 185

<210> 116
 <211> 549
 <212> DNA
 <213> Homo sapiens

<400> 116
 tgcaatatca gtgagcgtgt ggaactgaga aagaagttgg gctgtaaatc atttaaattgg 60
 tatttgata atgtataccc agagatgcag atatctgggt cccacgcaa accccaacaa 120
 cccatttttg tcaatagagg gccaaaacga ccaaagtcc ttcaacgtgg aaggctctat 180
 cacctccaga ccaacaaatg cctggtggcc cagggccgcc caagtcagaa gggaggtctc 240
 gtggtgctta aggcctgtga ctacagtgc ccaaatcaga tctggatcta taatgaagag 300
 catgaattgg ttttaaata tag tctcctttgt ctagatatgt cagagactcg ctcacagac 360
 ccgccacggc tcatgaaatg ccacgggtca ggaggatccc agcagtggac ctttgggaaa 420
 aacaatcggc tataccaggt gtcggttgga cagtgcctga gagcagtgga tcccctgggt 480
 cagaagggtct ctgtcgccat ggcgatctgc gatggctcct cttcacagca gtggcatttg 540
 gaaggttaa 549

<210> 117
 <211> 181
 <212> PRT
 <213> Homo sapiens

<400> 117

Asn Ile Ser Glu Arg Val Glu Leu Arg Lys Lys Leu Gly Cys Lys Ser
 1 5 10 15

Phe Lys Trp Tyr Leu Asp Asn Val Tyr Pro Glu Met Gln Ile Ser Gly
 20 25 30

Ser His Ala Lys Pro Gln Gln Pro Ile Phe Val Asn Arg Gly Pro Lys
 35 40 45

Arg Pro Lys Val Leu Gln Arg Gly Arg Leu Tyr His Leu Gln Thr Asn
 50 55 60

Lys Cys Leu Val Ala Gln Gly Arg Pro Ser Gln Lys Gly Gly Leu Val
 65 70 75 80

Val Leu Lys Ala Cys Asp Tyr Ser Asp Pro Asn Gln Ile Trp Ile Tyr
 85 90 95

Asn Glu Glu His Glu Leu Val Leu Asn Ser Leu Leu Cys Leu Asp Met
 100 105 110

Ser Glu Thr Arg Ser Ser Asp Pro Pro Arg Leu Met Lys Cys His Gly
 115 120 125

Ser Gly Gly Ser Gln Gln Trp Thr Phe Gly Lys Asn Asn Arg Leu Tyr
 130 135 140

Gln Val Ser Val Gly Gln Cys Leu Arg Ala Val Asp Pro Leu Gly Gln
 145 150 155 160

Lys Gly Ser Val Ala Met Ala Ile Cys Asp Gly Ser Ser Ser Gln Gln
 165 170 175

Trp His Leu Glu Gly
 180

<210> 118
 <211> 525
 <212> DNA
 <213> Homo sapiens

<400> 118

tgggatgtga cagagaggaa gcagctccgg gacaagctcc agtgtaaaga cttcaagtgg

60

ttcttggaga ctgtgtatcc agaactgcat gtgcctgagg acaggcctgg cttcttcggg 120
 atgctccaga acaaaggact aacagactac tgctttgact ataaccctcc cgatgaaaac 180
 cagattgtgg gacaccaggt cattctgtac ctctgtcatg ggatgggcca gaatcagttt 240
 ttcgagtaca cgtcccagaa agaaatacgc tataacaccc accagcctga gggctgcatt 300
 gctgtggaag caggaatgga tacccttattc atgcatctct gcgaagaaac tgccccagag 360
 aatcagaagt tcatcttgca ggaggatgga tctttatttc acgaacagtc caagaaatgt 420
 gtccaggctg cgaggaagga gtcgagtgc agtttcgttc cactcttacg agactgcacc 480
 aactcggatc atcagaaatg gttcttcaaa gagcgcatgt tatga 525

<210> 119
 <211> 173
 <212> PRT
 <213> Homo sapiens

<400> 119

Asp Val Thr Glu Arg Lys Gln Leu Arg Asp Lys Leu Gln Cys Lys Asp
 1 5 10 15

Phe Lys Trp Phe Leu Glu Thr Val Tyr Pro Glu Leu His Val Pro Glu
 20 25 30

Asp Arg Pro Gly Phe Phe Gly Met Leu Gln Asn Lys Gly Leu Thr Asp
 35 40 45

Tyr Cys Phe Asp Tyr Asn Pro Pro Asp Glu Asn Gln Ile Val Gly His
 50 55 60

Gln Val Ile Leu Tyr Leu Cys His Gly Met Gly Gln Asn Gln Phe Phe
 65 70 75 80

Glu Tyr Thr Ser Gln Lys Glu Ile Arg Tyr Asn Thr His Gln Pro Glu
 85 90 95

Gly Cys Ile Ala Val Glu Ala Gly Met Asp Thr Leu Ile Met His Leu
 100 105 110

Cys Glu Glu Thr Ala Pro Glu Asn Gln Lys Phe Ile Leu Gln Glu Asp
 115 120 125

Gly Ser Leu Phe His Glu Gln Ser Lys Lys Cys Val Gln Ala Ala Arg
 130 135 140

Lys Glu Ser Ser Asp Ser Phe Val Pro Leu Leu Arg Asp Cys Thr Asn
 145 150 155 160

Ser Asp His Gln Lys Trp Phe Phe Lys Glu Arg Met Leu
165 170

<210> 120
<211> 528
<212> DNA
<213> Homo sapiens

<400> 120
tctgagaagc cagactgcat ggaacgcttg cagctgcaaa ggagactggg ttgtcggaca 60
ttccactggt ttctggctaa tgtctaccct gagctgtacc catctgaacc caggcccagt 120
ttctctggaa agctccacaa cactggactt gggctctgtg cagactgcca ggcagaaggg 180
gacatcctgg gctgtcccat ggtgttggct ccttgacgtg acagccggca gcaacagtac 240
ctgcagcaca ccagcaggaa ggagattcac tttggcagcc cacagcacct gtgctttgct 300
gtcaggcagg agcaggtgat tcttcagaac tgcacggagg aaggcctggc catccaccag 360
cagcactggg acttccagga gaatgggatg attgtccaca ttctttctgg gaaatgcatg 420
gaagctgtgg tgcaagaaaa caataaagat ttgtacctgc gtccgtgtga tggaaaagcc 480
cgccagcagt ggcgttttga ccagatcaat gctgtggatg aacgatga 528

<210> 121
<211> 174
<212> PRT
<213> Homo sapiens

<400> 121
Glu Lys Pro Asp Cys Met Glu Arg Leu Gln Leu Gln Arg Arg Leu Gly
1 5 10 15
Cys Arg Thr Phe His Trp Phe Leu Ala Asn Val Tyr Pro Glu Leu Tyr
20 25 30
Pro Ser Glu Pro Arg Pro Ser Phe Ser Gly Lys Leu His Asn Thr Gly
35 40 45
Leu Gly Leu Cys Ala Asp Cys Gln Ala Glu Gly Asp Ile Leu Gly Cys
50 55 60
Pro Met Val Leu Ala Pro Cys Ser Asp Ser Arg Gln Gln Gln Tyr Leu
65 70 75 80
Gln His Thr Ser Arg Lys Glu Ile His Phe Gly Ser Pro Gln His Leu
85 90 95
Cys Phe Ala Val Arg Gln Glu Gln Val Ile Leu Gln Asn Cys Thr Glu
100 105 110

Glu Gly Leu Ala Ile His Gln Gln His Trp Asp Phe Gln Glu Asn Gly
 115 120 125

Met Ile Val His Ile Leu Ser Gly Lys Cys Met Glu Ala Val Val Gln
 130 135 140

Glu Asn Asn Lys Asp Leu Tyr Leu Arg Pro Cys Asp Gly Lys Ala Arg
 145 150 155 160

Gln Gln Trp Arg Phe Asp Gln Ile Asn Ala Val Asp Glu Arg
 165 170

<210> 122
 <211> 498
 <212> DNA
 <213> Homo sapiens

<400> 122
 tatggagatg tgtcagtcag aaaaacacta agagaaaatc tgaagtgtaa gcccttttct 60
 tggtacctag aaaacatcta tccggactcc cagatcccaa gacgttatta ctcaattggt 120
 gagataagaa atgttgaaac caatcagtgt ttagacaaca tgggccgcaa ggaaaatgaa 180
 aaagtgggta tattcaactg tcatgggtatg ggaggaaatc aggtattttc ttacactgct 240
 gacaaagaaa tccgaaccga tgacttgtgc ttggatgttt ctagactcaa tggacctgta 300
 atcatgttaa aatgccacca tatgagagga aatcagttat gggaatatga tgctgagaga 360
 ctcacgttgc gacatgttaa cagtaaccaa tgtctcgatg aaccttctga agaagacaaa 420
 atggtgccta caatgcagga ctgtagtgga agcagatccc aacagtggct gctaaggaac 480
 atgaccttgg gcacatga 498

<210> 123
 <211> 165
 <212> PRT
 <213> Homo sapiens

<400> 123
 Tyr Gly Asp Val Ser Val Arg Lys Thr Leu Arg Glu Asn Leu Lys Cys
 1 5 10 15
 Lys Pro Phe Ser Trp Tyr Leu Glu Asn Ile Tyr Pro Asp Ser Gln Ile
 20 25 30
 Pro Arg Arg Tyr Tyr Ser Leu Gly Glu Ile Arg Asn Val Glu Thr Asn
 35 40 45
 Gln Cys Leu Asp Asn Met Gly Arg Lys Glu Asn Glu Lys Val Gly Ile
 50 55 60

Phe Asn Cys His Gly Met Gly Gly Asn Gln Val Phe Ser Tyr Thr Ala
65 70 75 80

Asp Lys Glu Ile Arg Thr Asp Asp Leu Cys Leu Asp Val Ser Arg Leu
85 90 95

Asn Gly Pro Val Ile Met Leu Lys Cys His His Met Arg Gly Asn Gln
100 105 110

Leu Trp Glu Tyr Asp Ala Glu Arg Leu Thr Leu Arg His Val Asn Ser
115 120 125

Asn Gln Cys Leu Asp Glu Pro Ser Glu Glu Asp Lys Met Val Pro Thr
130 135 140

Met Gln Asp Cys Ser Gly Ser Arg Ser Gln Gln Trp Leu Leu Arg Asn
145 150 155 160

Met Thr Leu Gly Thr
165

<210> 124
<211> 516
<212> DNA
<213> Homo sapiens

<400> 124
tcgggaatgt tgagagcaga ttggacctga ggaagaatct gcgctgccag agcttcaagt 60
ggtacctgga gaatatctac cctgaactca gcatcccca ggagtcctcc atccagaagg 120
gcaatatccg acagagacag aagtgcctgg aatctcaaag gcagaacaac caagaaaccc 180
caaacctaaa gttgagcccc tgtgccaagg tcaaaggcga agatgcaaag tcccaggtat 240
gggccttcac atacaccag aagatcctcc aggaggagct gtgcctgtca gtcacacct 300
tgttcctgg cgccccagt gttcttgtcc tttgcaagaa tggagatgac cgacagcaat 360
ggaccaaacc tggttccac atcgagcaca tagcatccca cctctgcctc gatacagata 420
tgttcggtga tggcaccgag aacggcaagg aaatcggcgt caacccatgt gagtcctcac 480
tcatgagcca gactgggac atggtgagtt cttgag 516

<210> 125
<211> 171
<212> PRT
<213> Homo sapiens

<400> 125
Phe Gly Asn Val Glu Ser Arg Leu Asp Leu Arg Lys Asn Leu Arg Cys
1 5 10 15

Gln Ser Phe Lys Trp Tyr Leu Glu Asn Ile Tyr Pro Glu Leu Ser Ile
 20 25 30
 Pro Lys Glu Ser Ser Ile Gln Lys Gly Asn Ile Arg Gln Arg Gln Lys
 35 40 45
 Cys Leu Glu Ser Gln Arg Gln Asn Asn Gln Glu Thr Pro Asn Leu Lys
 50 55 60
 Leu Ser Pro Cys Ala Lys Val Lys Gly Glu Asp Ala Lys Ser Gln Val
 65 70 75 80
 Trp Ala Phe Thr Tyr Thr Gln Lys Ile Leu Gln Glu Glu Leu Cys Leu
 85 90 95
 Ser Val Ile Thr Leu Phe Pro Gly Ala Pro Val Val Leu Val Leu Cys
 100 105 110
 Lys Asn Gly Asp Asp Arg Gln Gln Trp Thr Lys Thr Gly Ser His Ile
 115 120 125
 Glu His Ile Ala Ser His Leu Cys Leu Asp Thr Asp Met Phe Gly Asp
 130 135 140
 Gly Thr Glu Asn Gly Lys Glu Ile Gly Val Asn Pro Cys Glu Ser Ser
 145 150 155 160
 Leu Met Ser Gln His Trp Asp Met Val Ser Ser
 165 170

<210> 126
 <211> 492
 <212> DNA
 <213> Homo sapiens

<400> 126
 agtgtggcta cgcggataga gcagaggaag aagatgaact gcaagtcctt ccgctggtac 60
 ctggagaacg tctaccaga gctcacggtc cccgtgaagg aagcactccc cggcatcatt 120
 aagcaggggg tgaactgctt agaatctcag ggccagaaca cagctggtga cttcctgctt 180
 ggaatgggga tctgcagagg gtctgccaag aaccgcgagc ccgcccaggc atggctgttc 240
 agtgaccacc tcatccagca gcaggggaag tgcctggctg ccacctccac cttaatgtcc 300
 tcccctggat cccagtcatt actgcagatg tgcaacccta gagaaggcaa gcagaaatgg 360
 aggagaaaag gatctttcat ccagcattca gtcagtggcc tctgcctgga gacaaagcct 420
 gccagctgg tgaccagcaa gtgtcaggct gacgcccagg cccagcagtg gcagctgttg 480
 ccacacacat ga 492

<210> 127
 <211> 163
 <212> PRT
 <213> Homo sapiens

<400> 127

Ser Val Ala Thr Arg Ile Glu Gln Arg Lys Lys Met Asn Cys Lys Ser
 1 5 10 15

Phe Arg Trp Tyr Leu Glu Asn Val Tyr Pro Glu Leu Thr Val Pro Val
 20 25 30

Lys Glu Ala Leu Pro Gly Ile Ile Lys Gln Gly Val Asn Cys Leu Glu
 35 40 45

Ser Gln Gly Gln Asn Thr Ala Gly Asp Phe Leu Leu Gly Met Gly Ile
 50 55 60

Cys Arg Gly Ser Ala Lys Asn Pro Gln Pro Ala Gln Ala Trp Leu Phe
 65 70 75 80

Ser Asp His Leu Ile Gln Gln Gln Gly Lys Cys Leu Ala Ala Thr Ser
 85 90 95

Thr Leu Met Ser Ser Pro Gly Ser Pro Val Ile Leu Gln Met Cys Asn
 100 105 110

Pro Arg Glu Gly Lys Gln Lys Trp Arg Arg Lys Gly Ser Phe Ile Gln
 115 120 125

His Ser Val Ser Gly Leu Cys Leu Glu Thr Lys Pro Ala Gln Leu Val
 130 135 140

Thr Ser Lys Cys Gln Ala Asp Ala Gln Ala Gln Gln Trp Gln Leu Leu
 145 150 155 160

Pro His Thr